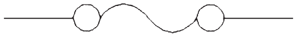
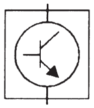
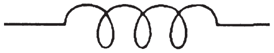
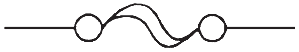
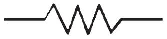
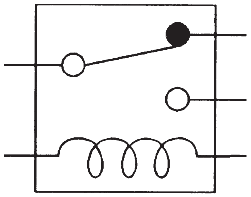
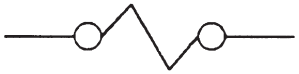
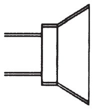
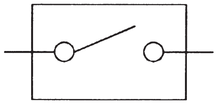
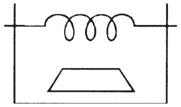
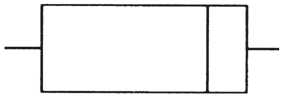
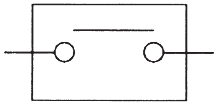
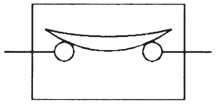
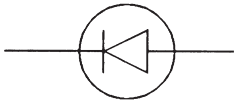
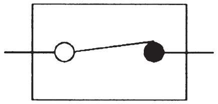
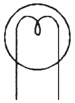
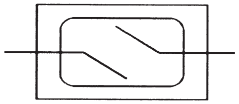
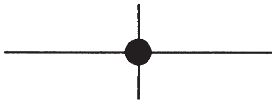
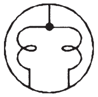
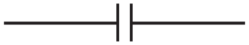
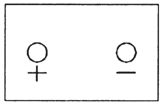
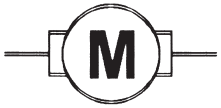
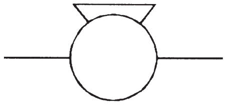
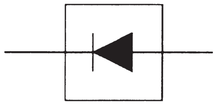
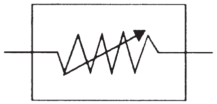
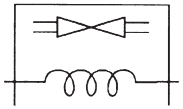
2026 Chevrolet Low Cab Forward

Gas Electrical Symbols

	Fuse		Electronic Parts		Coil (Inductor), Solenoid Magnetic Valve
	Fusible Link		Resistor		Relay
	Fusible Link Wire		Speaker		
	Switch		Buzzer		Connector
	Switch		Circuit Breaker		Light-Emitting Diode
	Switch (Normal Close Type)		Bulb		Reed Switch
	Contact Wiring		Double-Filament Bulb		Condenser
	Battery		Motor		Horn
	Diode		Variable Resistor Rheostat		Vacuum Switching Valve

Abbreviations

Abbreviation	Definition	Abbreviation	Definition
3A/T	6-Speed Automatic Transmission	IG	Ignition
4A/T	4-Speed Automatic Transmission	kW	kilowatt
A/T	Automatic Transmission	LH	Left hand
ABS	Anti-lock brake system	LO	Low
APP	Accelerator pedal position	LWB	Long wheelbase
ATF	Automatic Transmission Fluid	M/T	Manual Transmission
AUTO	Automatic	M/V	Magnetic valve
BRKT	Bracket	MAF	Mass airflow
C/B	Circuit breaker	MIL	Check engine light
CKP	Crankshaft position	OD	Over drive
CMP	Camshaft position	OPT	Option
COMB	Combination	PTO	Power Take Off
CONT	Control	RH	Right hand
D.R.L.	Day time running light	RR	Rear
DC	Direct current	SCV	Suction control valve
ECM	Electronic control module	ST	Start
ECT	Engine coolant temperature	STD	Standard
ECU	Electronic control unit	SW	Switch
EGR	Exhaust gas reticulation	SWB	Short wheelbase
EHCU	Electronic and hydraulic control unit	TCM	Transmission control module
FL	Fusible link	V	Volt
FRT	Front	VSV	Vacuum switching valve
FT	Fuel Temperature	W	Watt (S)
H/L	Headlight	W/	With
HI	High	W/O	Without
IAT	Intake air temperature	W/S	Weld splice
IC	Integrated circuit	WOT	Wide-open throttle

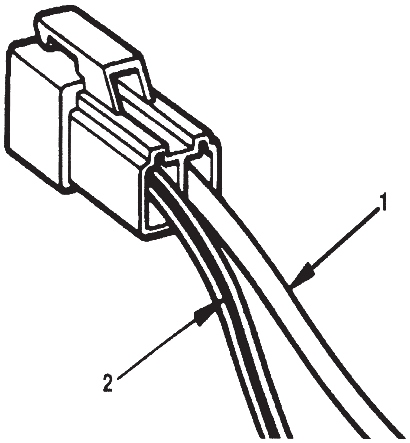
Wiring

Wire Color

All wires have color-coded insulation. Wires belonging to a system's main harness will have a single color. Wires belonging to a system's sub-circuits will have a colored stripe. Striped wires use the following code to show wire size and colors.

Example: 0.5 G / R

R — Red (Stripe Color)
G — Green (Base Color)
0.5 — Wire Size (0.5 mm^2)



1. Single Color Wire
2. Colored Stripe Wire

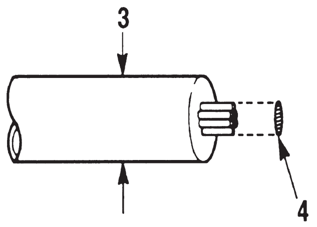
Wiring

Abbreviations are used to indicate wire color within a circuit diagram. Refer to the following table.

Color-Coding	Meaning	Color-Coding	Meaning
B	Black	BR	Brown
W	White	LG	Light Green
R	Red	GR	Grey
G	Green	P	Pink
Y	Yellow	LB	Light Blue
L	Blue	V	Violet
O	Orange		

Wire Size

The size of wire used in a circuit is determined by the amount of current (amperage), the length of the circuit, and the voltage drop allowed. The following wire size and load capacity are specified by AWG (American Wire Gauge). (Nominal size means approximate cross sectional area.)



3. Outside Diameter
4. Cross Sectional Area

Wiring

Nominal Size	Cross Sectional Area (mm^2)	Outside Diameter (mm)	Allowable Current (A)	AWG Size (Cross reference)
0.3	0.372	1.8	9	22
0.5	0.563	2.0	12	20
0.85	0.885	2.2	16	18
1.25	1.287	2.5	21	16
2	2.091	2.9	28	14
3	3.296	3.6	37.5	12
5	5.227	4.4	53	10
8	7.952	5.5	67	8
15	13.36	7.0	75	6
20	20.61	8.2	97	4

Alternator pulley ratio 3500 HG 4500 HG Gas Engine.
L8T 6.6L 3.16 : 1 alternator pullet to crankshaft pulley

Fuses

Replacing Fuses

1. Before replacing fuses, apply the parking brake, then move the selector lever to the "P" (Park) position, and turn the engine control switch to the "LOCK" position.
2. Place the fuse puller on the fuse and pull it out. (The fuse puller is stored in the fuse box inside the cab.)
3. If the fuse appears as shown in the right hand side of the diagram at left, the fuse is blown. Replace with a spare fuse. (Spare fuses are stored in the fuse box inside the cab.)

Replacing Relays

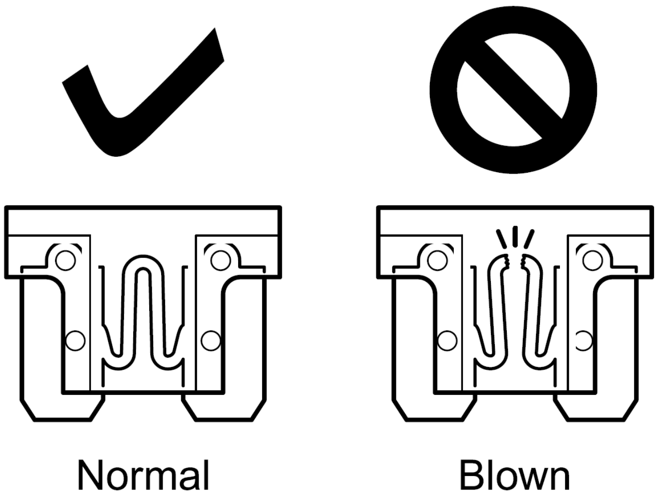
1. Before replacing the relays, contact the nearest Chevrolet Dealer.

Fusible Links

1. The fusible link is primarily used to protect circuits where high amounts of current flow and where it would not be practical to use a fuse. For example, the starter circuit. When a current overload occurs, the fusible link melts open and interrupts the flow of current so as to prevent the rest of the wiring harness from burning.
2. Determine the cause of the overload before replacing the fusible link. The replacement fusible link must have the same amperage specification as the original fusible link.
3. Never replace a blown fusible link with fusible link of a different amperage specification. Doing so can result in an electrical fire or other serious circuit damage.

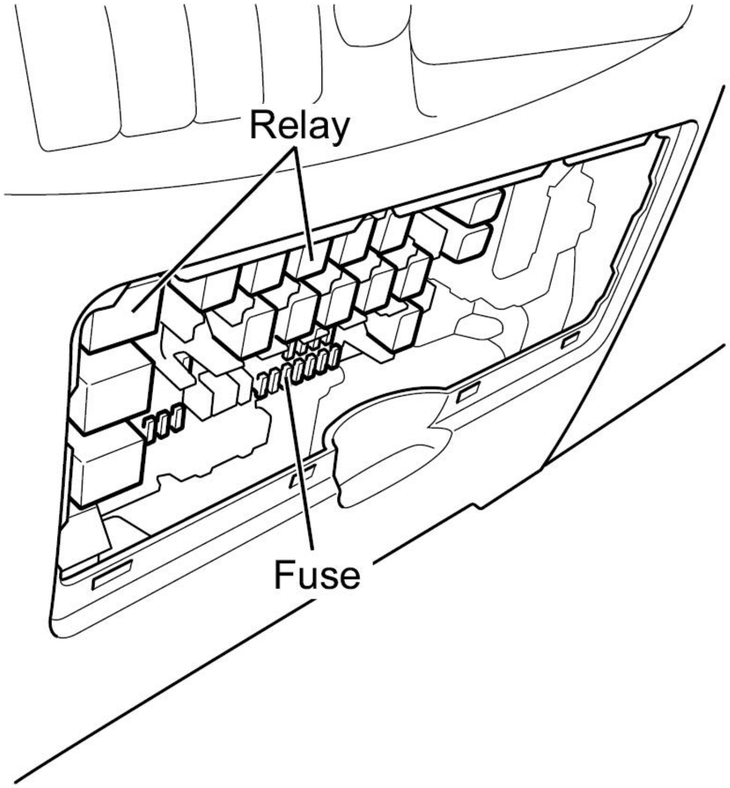
⚠ CAUTION

- Always use fuses specified by Isuzu. Using fuses with a rating other than that specified, or using wire or tin foil, etc., could result in fire or damage.
- If the new fuses blow right away and the cause is unknown, contact the nearest Isuzu Dealer.
- Do not inspect or replace fuses when the engine control switch is in the "ON" position. Doing so may lead to an accident.
- When inspecting fuses, be sure to park the vehicle on flat, level ground and apply chocks to the wheels.

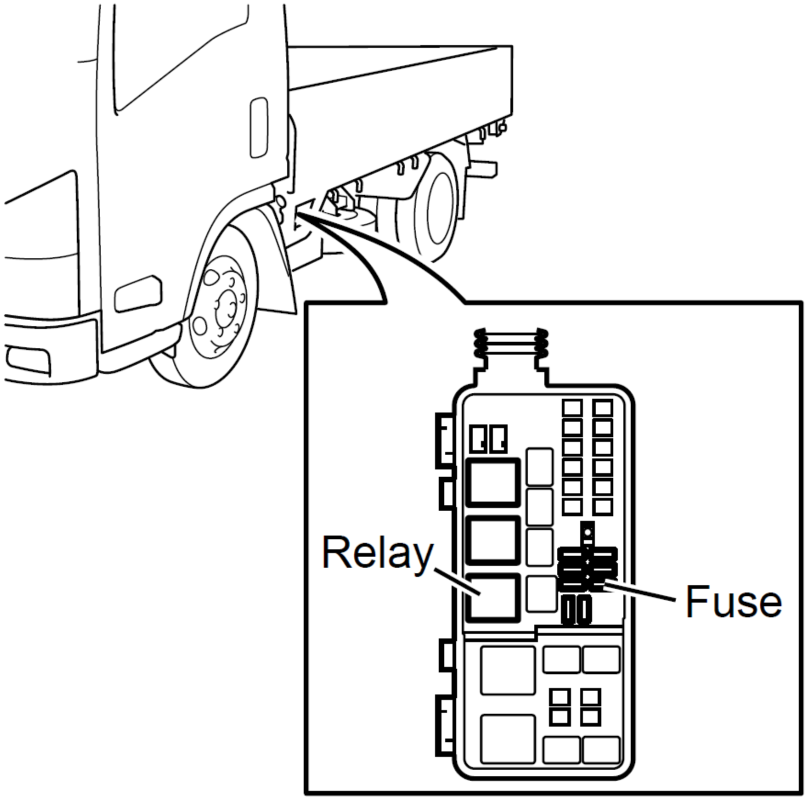


Fuse and Relay Box Locations

Interior

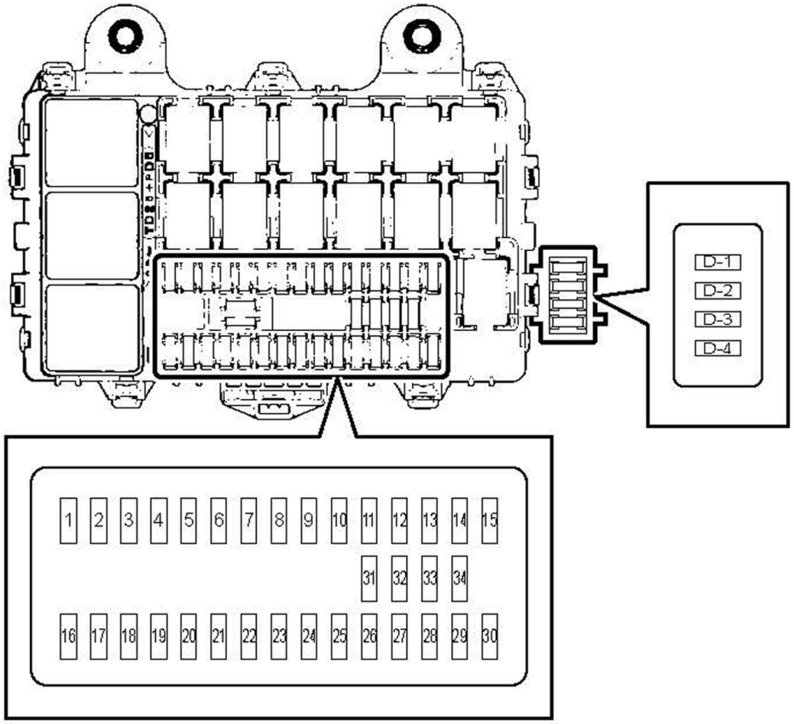


Exterior



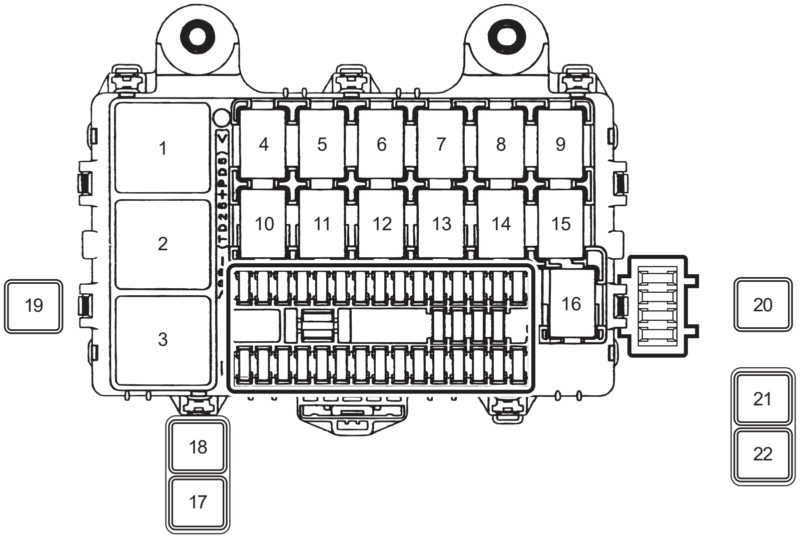
2026 Chevrolet Low Cab Forward

Fuse Locations Interior


D-1
D-2
D-3
D-4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
31
32
33
34
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

No.	Description	Rating
1	RR P / WINDOW	25A
2	—	—
3	ROOM LAMP, AUDIO	10A
4	DOOR LOCK	15A
5	TRAILER BRAKE	15A
6	P/ WINDOW	25A
7	ABS	10A
8	WIPER	25A
9	H / LAMP LO (LH)	10A
10	LAMPS (BATT)	10A
11	H / LAMP LO (RH)	10A
12	BRAKE LAMPS	10A
13	STARTER	10A
14	H / LAMP HI (LH)	10A
15	H / LAMP HI (RH)	10A
16	MIRROR HEATER	15A
17	IGNITION2	10A
18	IGNITION1	10A
19	—	—
20	ECM	10A
21	METER	10A
22	ECU (BATT)	10A
23	MIRROR	10A
24	AUDIO, ACC	15A
25	HORN	15A
26	TURN, HAZARD	15A
27	TAIL LAMPS	10A
28	ILLUMINATIONS	10A
29	CORNERING LAMPS	10A
30	AIR CONDITIONER	10A
31	SPARE	10A
32	SPARE	15A
33	SPARE	25A
34	SPARE	20A
D-1	CIGAR	20A
D-2	ACCESSORIES SOCKET	15A
D-3	POWER SOURCE	20A
D-4	AUDIO REVERSE MUTE	10A

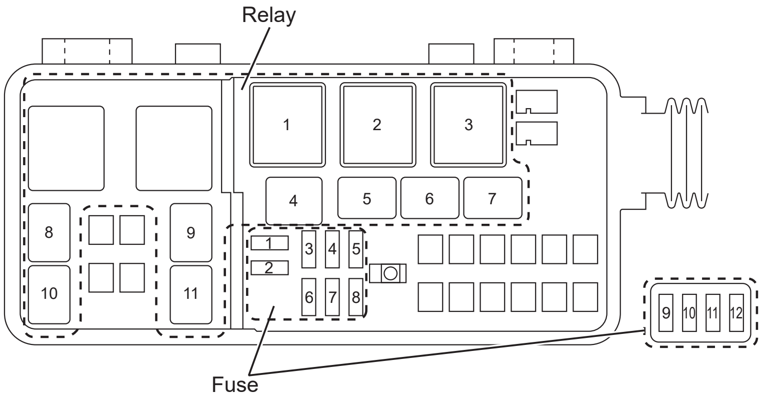
Relay Locations Interior


1
2
3
(TD26+PD8)
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

No.	Description
1	BRAKE LAMP
2	DAYTIME RUNNING LAMP
3	KEY ON
4	TCM
5	PARKING/NEUTRAL
6	WIPER MAIN
7	HORN
8	WIPER HI LO
9	TRAILER BRAKE
10	REAR POWER WINDOW
11	CHARGE (ENG RUN)

No.	Description
12	POWER WINDOW
13	HEAD LAMP LO
14	CORNERING LAMP
15	HEAD LAMP HI
16	TAIL LAMP
17	DAYTIME RUNNING LAMP
18	CIGAR LIGHTER
19	POWER ACC
20	BLOWER MOTOR
21	HEAD LAMP WASHER
22	HEAD LAMP WASHER

Fuse and Relay Locations Exterior - 3500 HG / 4500 HG



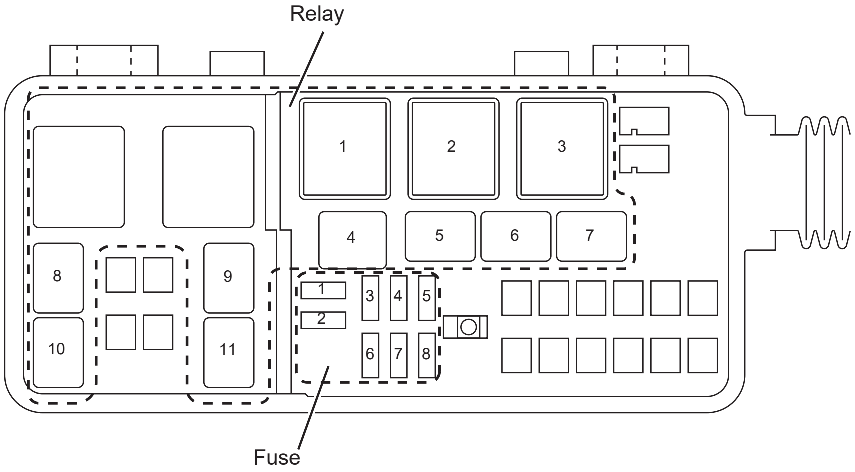
No.	Relay name
1	STARTER
2	TAIL LAMP
3	—
4	A/C COMPRESSOR
5	CONDENSER FAN
6	—
7	RR DOME LAMP
8	—
9	—
10	MARKER LAMP
11	PCM MAIN
12	—
13	A/C

No.	Fuse name	Rating
1	MARKER LAMP	20A
2	TAIL MAIN	20A
3	PCM1	25A
4	PCM2	15A
5	PCM3	15A
6	POWER SOURCE	15A
7	CONDENSER FAN	20A
8	A/C COMPRESSOR	10A
9	IGN-COILS EVEN*	20A
10	IGN-COILS ODD*	20A
11	TAIL LAMP*	10A
12	TCM*	10A

*: Fuse No. 9 to No. 12 are installed inside the vehicle frame. If replacement or inspection is necessary, please contact your Chevrolet Dealer.

2026 Chevrolet Low Cab Forward

Fuse and Relay Locations Exterior - 5500 HG / 5500 XG



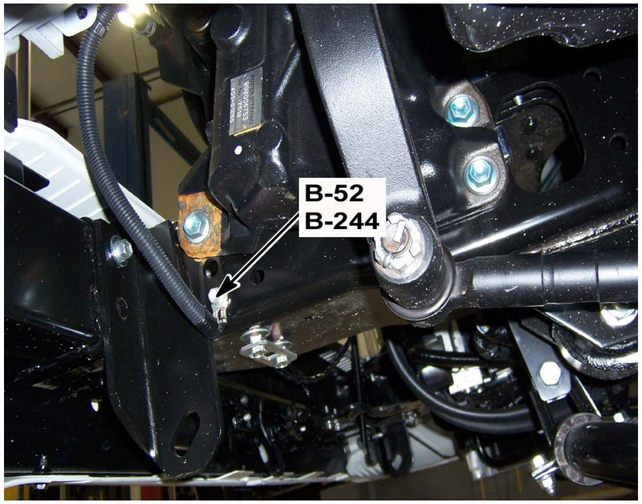
No.	Relay name
1	STARTER
2	TAIL LAMP
3	—
4	A/C COMPRESSOR
5	CONDENSER FAN
6	FUEL PUMP
7	RR DOME LAMP
8	MARKER LAMP
9	PCM MAIN
10	—
11	A/C

No.	Fuse name	Rating
1	MARKER LAMP	20A
2	TAIL MAIN	20A
3	PCM1	25A
4	PCM2	15A
5	PCM3	15A
6	POWER SOURCE	15A
7	CONDENSER FAN	20A
8	A/C COMPRESSOR	10A
9	TAIL LAMP*	10A
10	IGN-COILS EVEN*	20A
11	IGN-COILS ODD*	20A

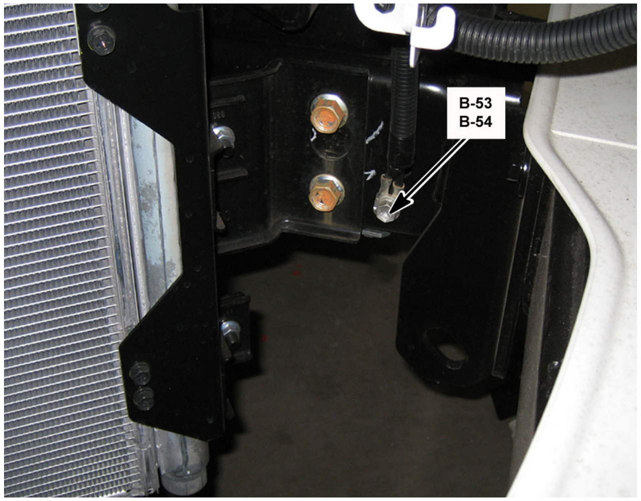
*: Fuse No. 9 to No. 11 are installed inside the vehicle frame. If replacement or inspection is necessary, please contact your Chevrolet Dealer.

Grounding Point Location

B-52 and B-244

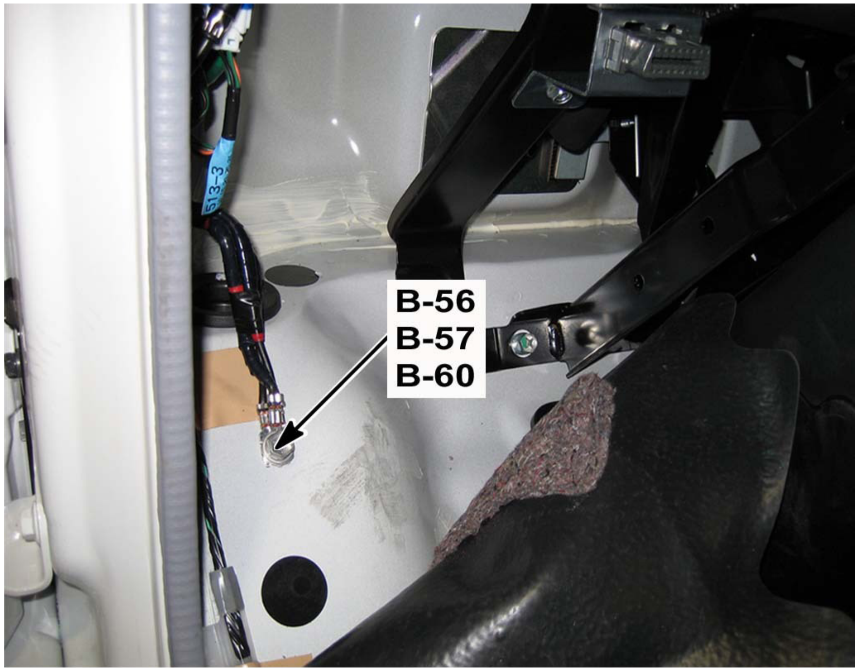


B-53 and B-54

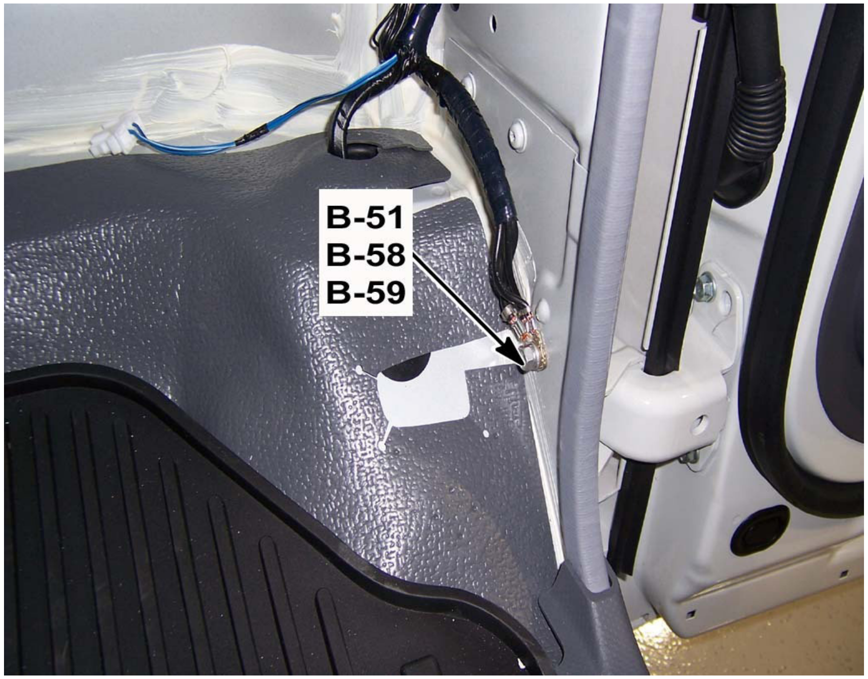


Grounding Point Location

B-56, B-57 and B-60

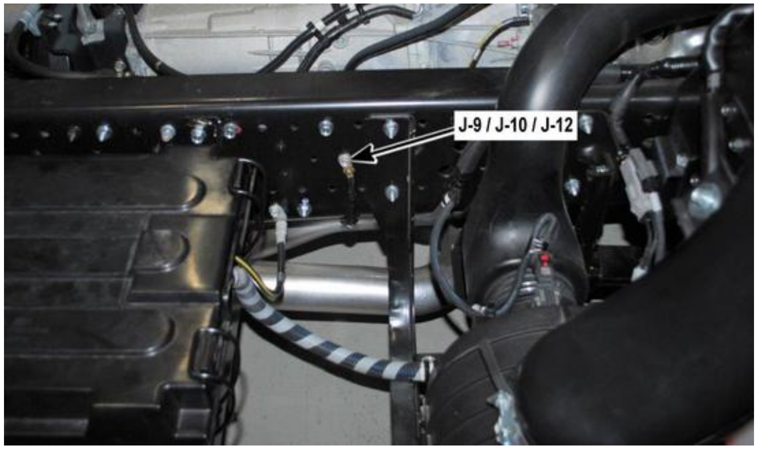

513-3
B-56
B-57
B-60

B-51, B-58 and B-59

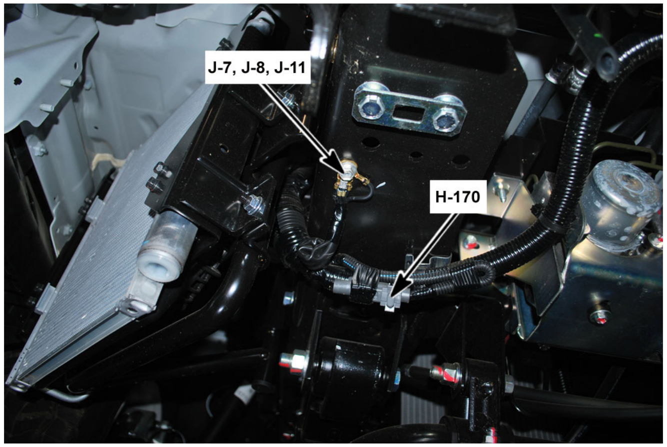


Grounding Point Location

J-9, J-10 and J-12

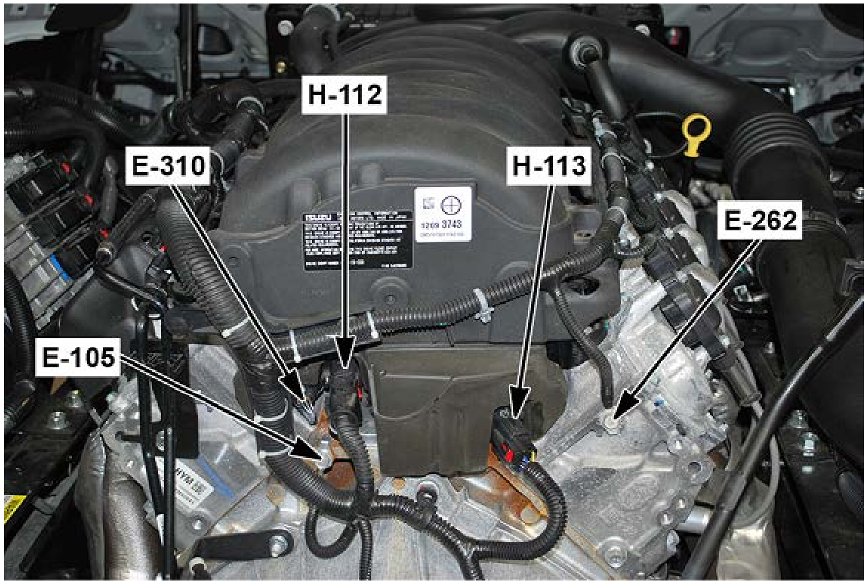


J-7, J-8 and J-11

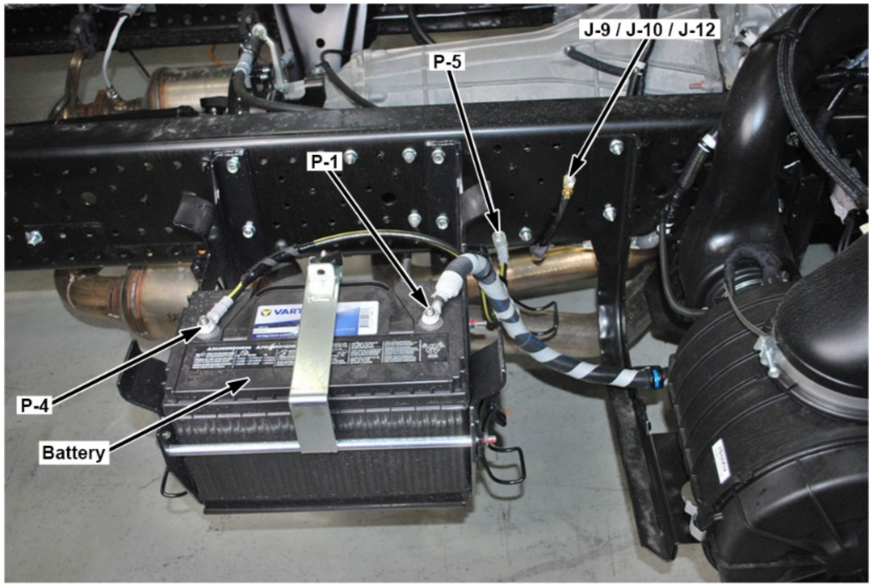

J-7, J-8, J-11
H-170

Grounding Point Location

E-105


H-112
E-310
H-113
E-262
E-105

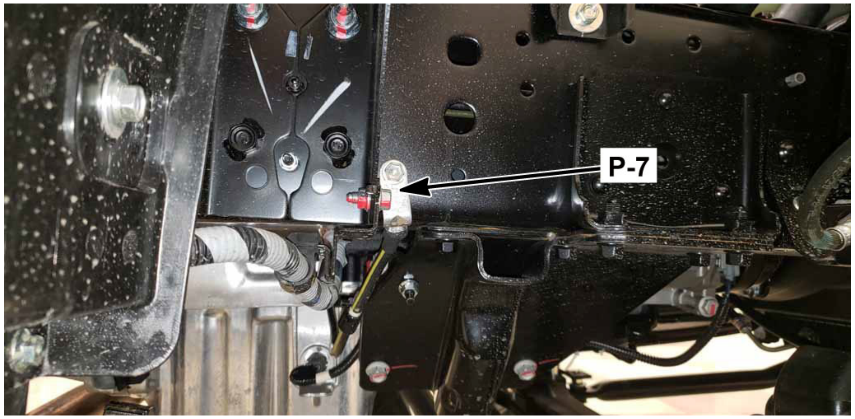
P-5


J-9 / J-10 / J-12
P-5
P-1
P-4
Battery

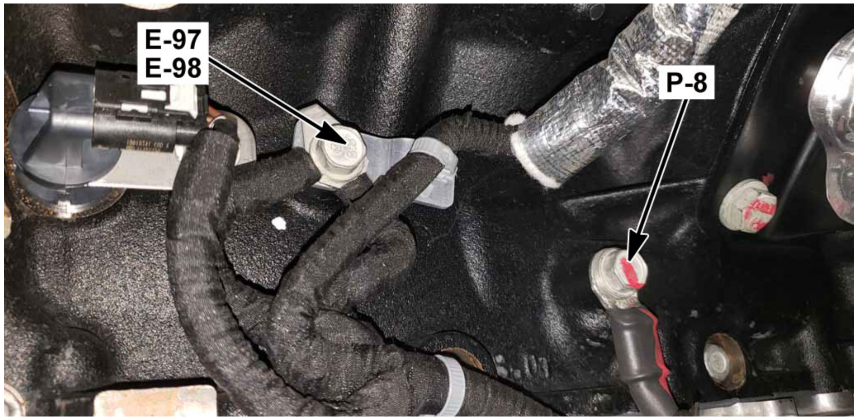
2026 Chevrolet Low Cab Forward

Grounding Point Location

P-7

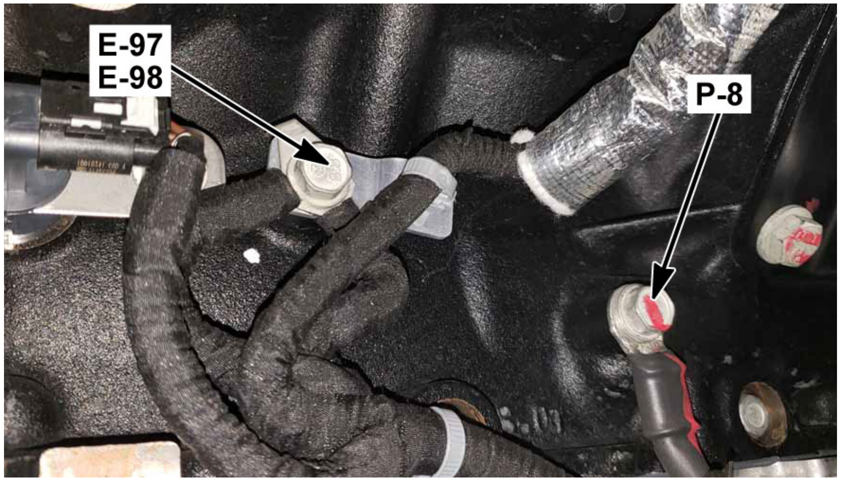


E-97 & E-98



Grounding Point Location

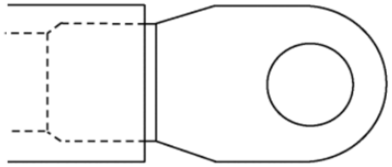
P-8

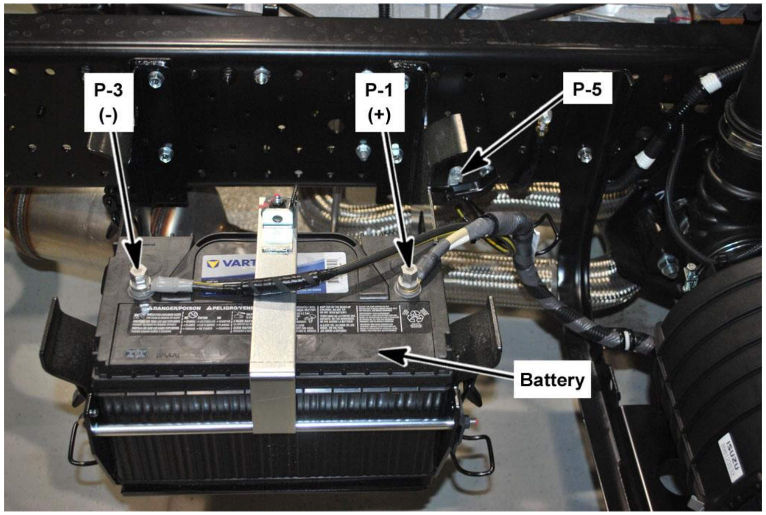


Reference Table of Grounding Points

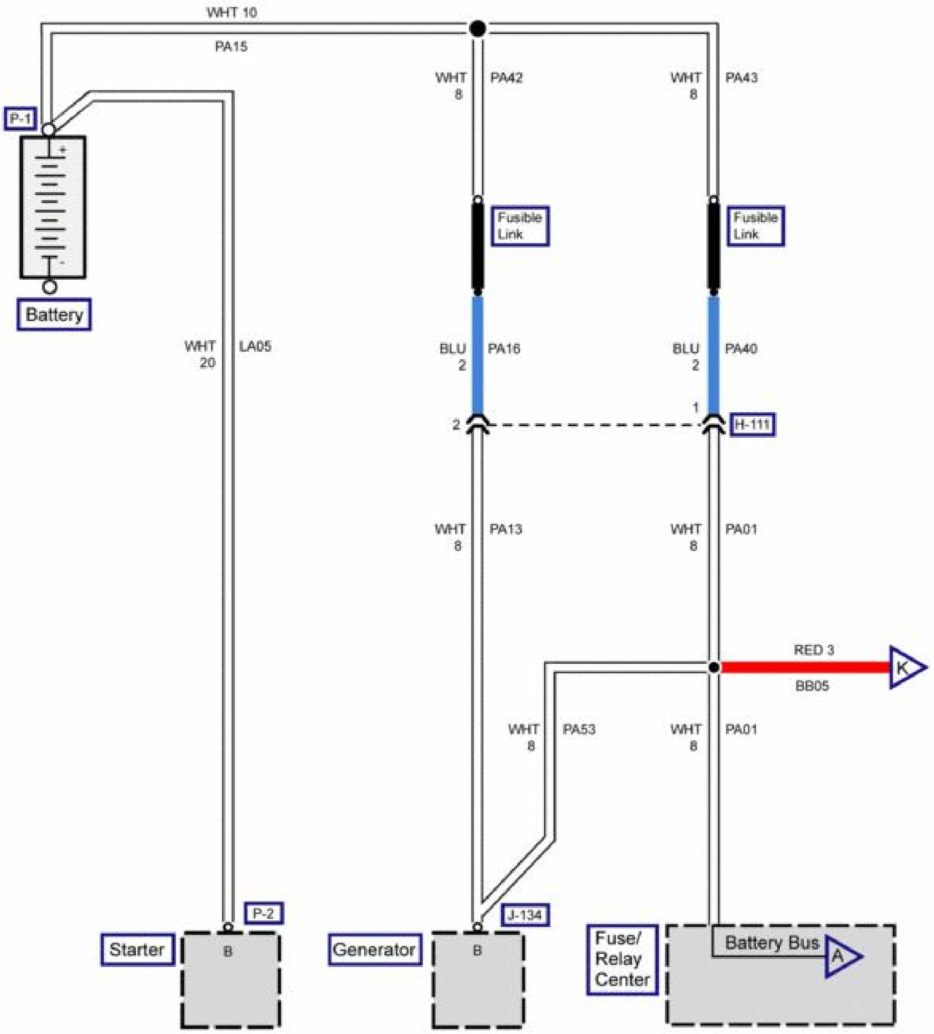
Connector Number	Load	Location
B-52	Ground to Splice Pack B-561 and Splice Pack B-49	On the Front Left Frame Rail, Behind the Front Bumper
B-244	Ground to B-56	On the Front Left Frame Rail, Behind the Front Bumper
B-53 and B-54	Ground to Splice Pack B-53	On the Front Right Frame Rail, Behind the Front Bumper
B-51, B-58, and B-59	Ground to Splice 9	Behind the Right Side of the I/P, On the Interior Wall of the Right A-Pillar
B-56, B-57, and B-60	Ground to B-244	On the Front Cab Floor Under the Floor Mat, Next to the Left A-Pillar
E-105	Engine Ground	Left Rear of Engine On Cylinder Head
E-97 and E-98	Ground to Oil Level Sensor, AC Compressor and ECM	Right Lower Rear of Engine, Next to the Starter
J-7, J-8, and J-11	Ground to J-12 and Rear Manufactures Connector	Bottom of Right Front Frame Rail, Behind Front Bumper
J-9, J-10, and J-12	Ground to J-7 and Rear Manufactures Connector	Right Outer Frame Rail, in Front of the Battery
P-5	Ground from Battery	Right Outer Frame Rail, in Front of the Battery
P-7	Frame Ground to Engine Ground P-8	Right Outer Frame Rail, Just Behind the Engine Crossmember
P-8	Engine Ground to Frame Ground P-7	Right Lower Side of the Engine Block, Just Behind the Motor Mount

Battery Cable Connection

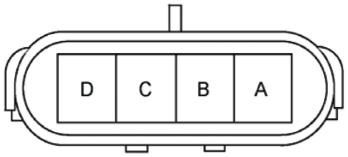
P-1 & P-3: Battery Positive and Negative Terminals			
 Connector End View			
PIN	Wire Color	Circuit Number	Function
P-1	WHT WHT	PA15 LA05	Battery Positive to Fuse Links Battery Positive to Starter Motor
P-3	BLK/YEL	-	Battery Negative to Frame (P-5)
Connector Part Information			
	Part Number	Description	
Chassis Side Connector	7306-3102-01	1-Way Eyelet	

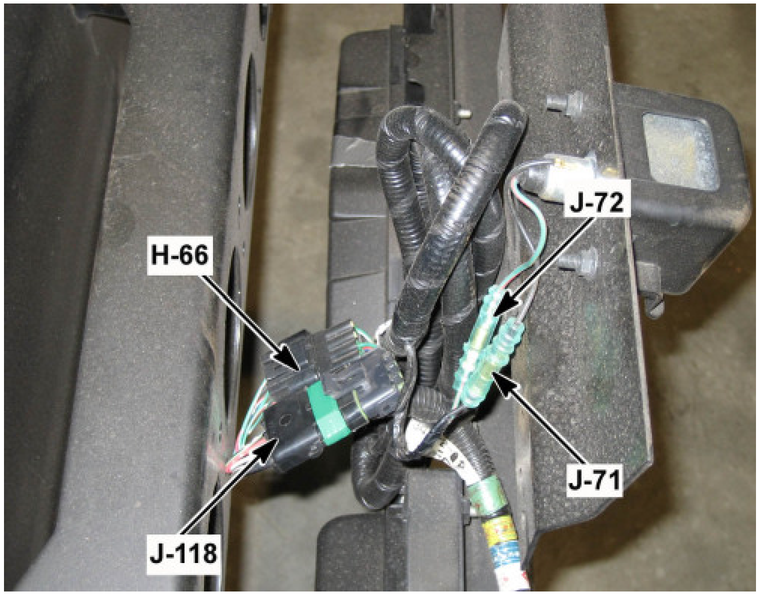

P-3
(-)
P-1
(+)
P-5
Battery

Tightening Torques: 15 N-m (11 lb-ft)

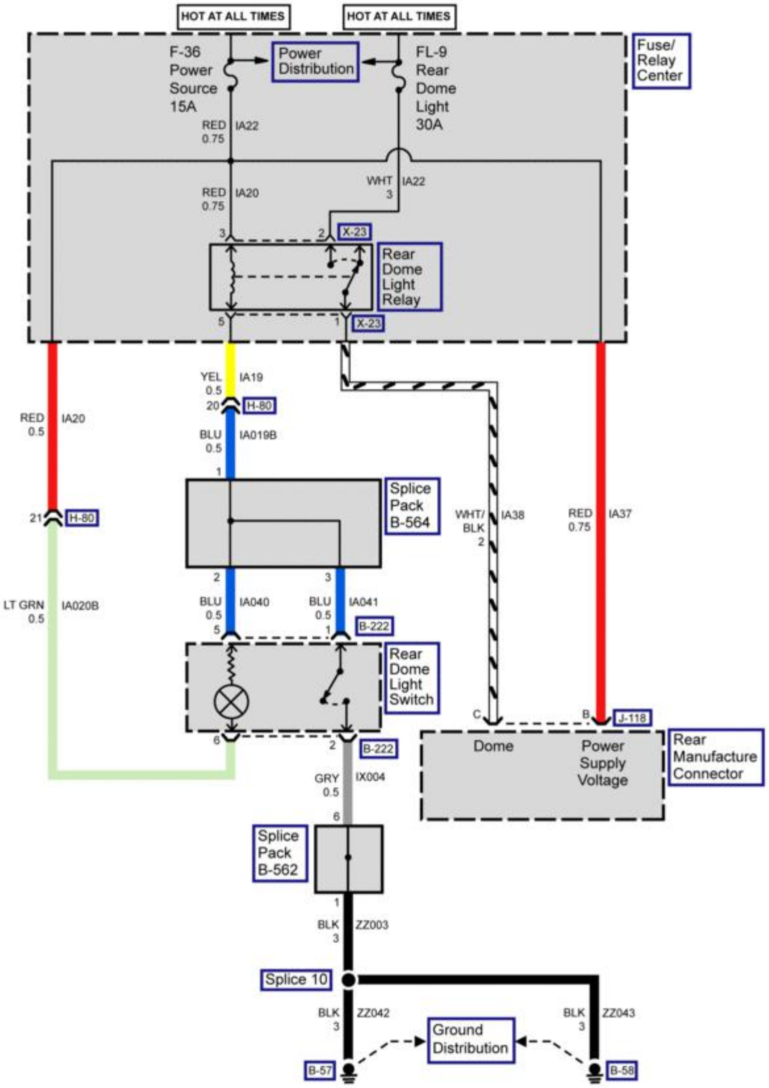

WHT 10
PA15
P-1
Battery
WHT 20
LA05
WHT 8
PA42
Fusible Link
BLU 2
PA16
2
WHT 8
PA13
WHT 8
PA43
Fusible Link
BLU 2
PA40
1
H-111
WHT 8
PA01
RED 3
BB05
K
WHT 8
PA53
WHT 8
PA01
P-2
Starter
B
J-134
Generator
B
Fuse/ Relay Center
Battery Bus
A

Rear Manufacture Connector

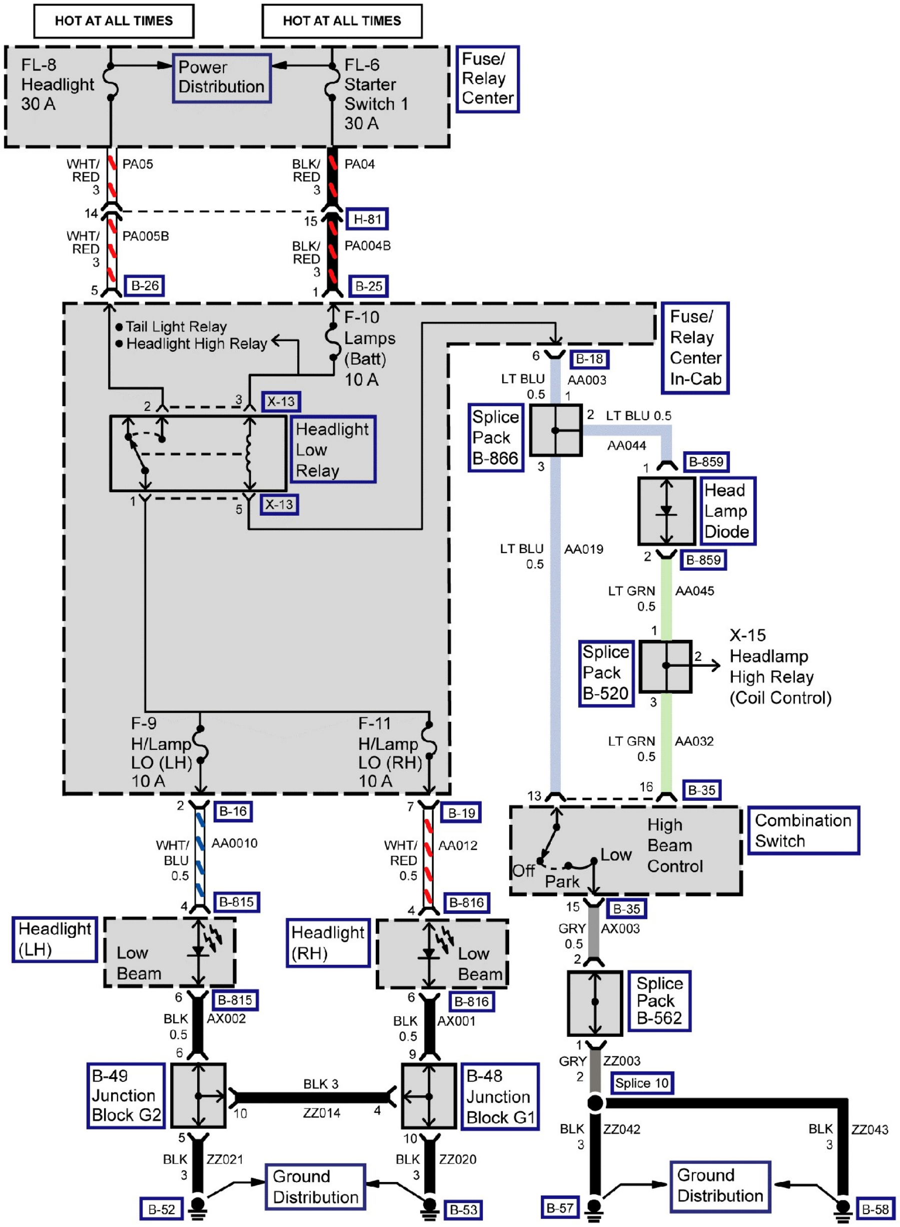
J-118 Rear Manufacture Connector			
 Connector End View			
PIN	Wire Color	Circuit Number	Function
A	LT GRN/BLK	BA58	Marker Light Voltage
B	RED	IA37	Power Source Voltage F-36
C	WHT/BLK	IA38	Rear Dome Light Relay Control (Switched Output)
D	BLK	IX23	Ground J-12 and J-7
Back Up Alarm Connector P/N's			
	Part Number		Description
Chassis Side Connector	Contact Dealer (Delphi)		4-Way M (BLK)


H-66
J-72
J-71
J-118

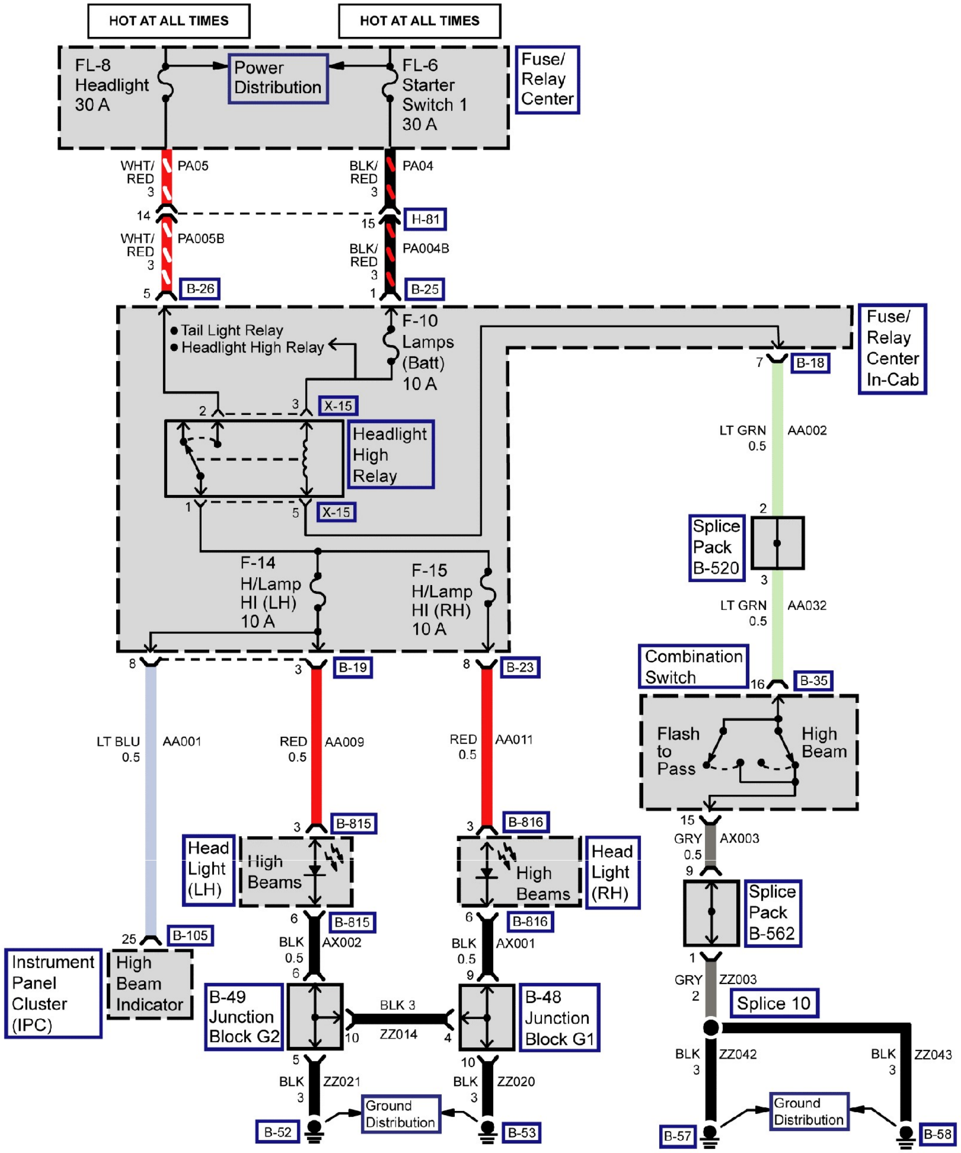
Center rear of last crossmember


HOT AT ALL TIMES
HOT AT ALL TIMES
F-36 Power Source 15A
Power Distribution
FL-9 Rear Dome Light 30A
Fuse/ Relay Center
RED 0.75 IA22
RED 0.75 IA20
WHT 3 IA22
3
2
X-23
Rear Dome Light Relay
5
1
X-23
YEL 0.5 20 IA19
H-80
RED 0.5 IA20
BLU 0.5 IA019B
1
Splice Pack B-564
21
H-80
WHT/ BLK 2 IA38
RED 0.75 IA37
2
3
LT GRN 0.5 IA020B
BLU 0.5 5 IA040
BLU 0.5 1 IA041
B-222
Rear Dome Light Switch
C
B
J-118
6
2
B-222
Dome
Power Supply Voltage
Rear Manufacture Connector
GRY 0.5 IX004
6
Splice Pack B-562
1
BLK 3 ZZ003
Splice 10
BLK 3 ZZ042
BLK 3 ZZ043
Ground Distribution
B-57
B-58

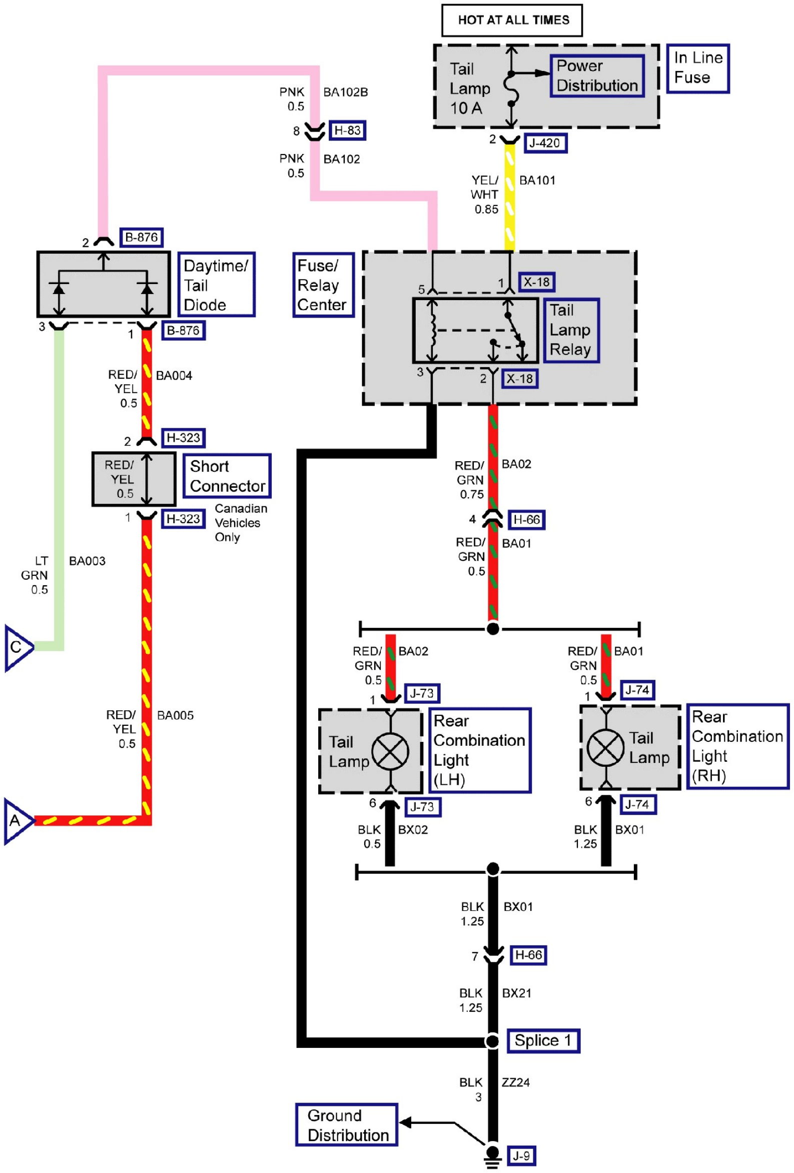
Headlights (Low Beam)

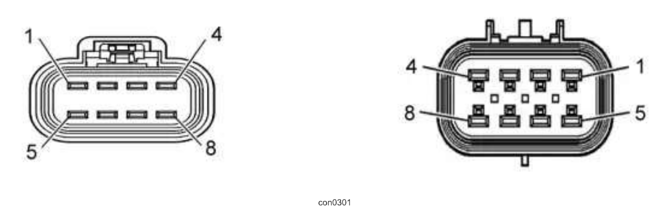

HOT AT ALL TIMES
HOT AT ALL TIMES
FL-8 Headlight 30 A
Power Distribution
FL-6 Starter Switch 1 30 A
Fuse/ Relay Center
WHT/ RED 3
PA05
BLK/ RED 3
PA04
14
15
H-81
WHT/ RED 3
PA005B
BLK/ RED 3
PA004B
5
B-26
1
B-25
Tail Light Relay
Headlight High Relay
F-10 Lamps (Batt) 10 A
Fuse/ Relay Center In-Cab
6
B-18
LT BLU 0.5
AA003
1
2
LT BLU 0.5
AA044
Splice Pack B-866
3
1
B-859
Head Lamp Diode
2
B-859
2
3
X-13
Headlight Low Relay
1
5
X-13
LT BLU 0.5
AA019
LT GRN 0.5
AA045
1
Splice Pack B-520
2
X-15 Headlamp High Relay (Coil Control)
3
LT GRN 0.5
AA032
F-9 H/Lamp LO (LH) 10 A
F-11 H/Lamp LO (RH) 10 A
13
16
B-35
High Beam Control
Off
Park
Low
Combination Switch
15
B-35
GRY 0.5
AX003
2
Splice Pack B-562
1
GRY 2
ZZ003
Splice 10
2
B-16
WHT/ BLU 0.5
AA0010
7
B-19
WHT/ RED 0.5
AA012
4
B-815
Headlight (LH)
Low Beam
4
B-816
Headlight (RH)
Low Beam
6
B-815
BLK 0.5
AX002
6
B-816
BLK 0.5
AX001
6
9
B-49 Junction Block G2
BLK 3
10
ZZ014
4
B-48 Junction Block G1
5
BLK 3
ZZ021
10
BLK 3
ZZ020
Ground Distribution
B-52
B-53
BLK 3
ZZ042
BLK 3
ZZ043
Ground Distribution
B-57
B-58

Headlights (High Beam)


HOT AT ALL TIMES
HOT AT ALL TIMES
FL-8 Headlight 30 A
Power Distribution
FL-6 Starter Switch 1 30 A
Fuse/ Relay Center
WHT/ RED 3
PA05
BLK/ RED 3
PA04
14
15
H-81
WHT/ RED 3
PA005B
BLK/ RED 3
PA004B
5
B-26
1
B-25
Tail Light Relay
Headlight High Relay
F-10 Lamps (Batt) 10 A
Fuse/ Relay Center In-Cab
7
B-18
2
3
X-15
Headlight High Relay
1
5
X-15
LT GRN 0.5
AA002
2
Splice Pack B-520
3
LT GRN 0.5
AA032
F-14 H/Lamp HI (LH) 10 A
F-15 H/Lamp HI (RH) 10 A
8
3
B-19
8
B-23
Combination Switch
16
B-35
Flash to Pass
High Beam
LT BLU 0.5
AA001
RED 0.5
AA009
RED 0.5
AA011
3
B-815
3
B-816
15
GRY 0.5
AX003
9
Head Light (LH)
High Beams
High Beams
Head Light (RH)
Splice Pack B-562
6
B-815
6
B-816
25
B-105
Instrument Panel Cluster (IPC)
High Beam Indicator
BLK 0.5
AX002
BLK 0.5
AX001
6
9
1
GRY 2
ZZ003
Splice 10
B-49 Junction Block G2
BLK 3
ZZ014
10
4
B-48 Junction Block G1
5
10
BLK 3
ZZ021
BLK 3
ZZ020
BLK 3
ZZ042
BLK 3
ZZ043
Ground Distribution
Ground Distribution
B-52
B-53
B-57
B-58

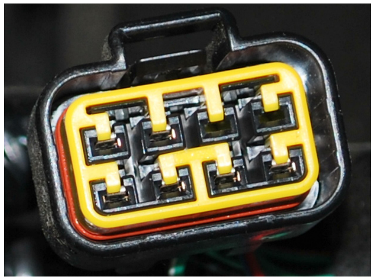
Taillights


HOT AT ALL TIMES
Tail Lamp 10 A
Power Distribution
In Line Fuse
2
J-420
YEL/ WHT 0.85
BA101
PNK 0.5
BA102B
8
H-83
PNK 0.5
BA102
2
B-876
Daytime/ Tail Diode
3
1
B-876
Fuse/ Relay Center
5
1
X-18
Tail Lamp Relay
3
2
X-18
RED/ YEL 0.5
BA004
2
H-323
RED/ YEL 0.5
Short Connector
1
H-323
Canadian Vehicles Only
LT GRN 0.5
BA003
C
RED/ YEL 0.5
BA005
A
RED/ GRN 0.75
BA02
4
H-66
RED/ GRN 0.5
BA01
RED/ GRN 0.5
BA02
1
J-73
Tail Lamp
Rear Combination Light (LH)
6
J-73
BLK 0.5
BX02
RED/ GRN 0.5
BA01
1
J-74
Tail Lamp
Rear Combination Light (RH)
6
J-74
BLK 1.25
BX01
BLK 1.25
BX01
7
H-66
BLK 1.25
BX21
Splice 1
BLK 3
ZZ24
Ground Distribution
J-9

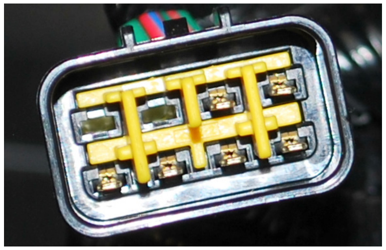

1
4
5
8
4
1
8
5
con0301

Part Information	• X010369 Furukawa • 8-Way F (BLK)			Part Information	• X010371 Furukawa • 8-Way M (BLK)		
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
1	GRN/BLK	JA024	Turn Signal Light Voltage (LH) from Splice Pack B-508	1	GRN/BLK	JA14	Turn Signal Light Voltage (LH) to Rear Combination Light (LH)
2	GRN	CA001	Rear Combination Lights Voltage from Splice Pack B-559	2	GRN	CA01	Rear Combination Lights Voltage to Rear Lights
3	—	—	Not Used	3	—	—	Not Used
4	RED/GRN	BA002	Tail Light Voltage from Tail Lamp Relay X-16 pin 2	4	RED/GRN	BA01	Tail Light Voltage to Rear Lights
5	GRN/RED	BA059	Voltage from Fuse F-27	5	GRN/RED	BA04	Fuse F-27 Supply Voltage to License Plate Light
6	RED/BLU	KA002	Voltage When in Reverse (Fuse F-18)	6	RED/BLU	KA12	Voltage When in Reverse (Fuse F-18) to Rear Lights
7	BLK	BX021	Ground to Splice 1 (J-9 Ground)	7	BLK	BX01	Ground to Splice 1 (J-9 Ground) to Rear Lighting
8	GRN/WHT	JA025	Turn Signal Light Voltage (RH) from Splice 19	8	GRN/WHT	JA15	Turn Signal Light Voltage (RH) to Rear Combination Light (RH)

The connectors that match the end of frame tail and stop lamp harness can now be ordered through GM dealership.



Chassis harness side
part number **Contact Dealer**



Stop and tail lamp side part
number **Contact Dealer**

Roof Marker Lights

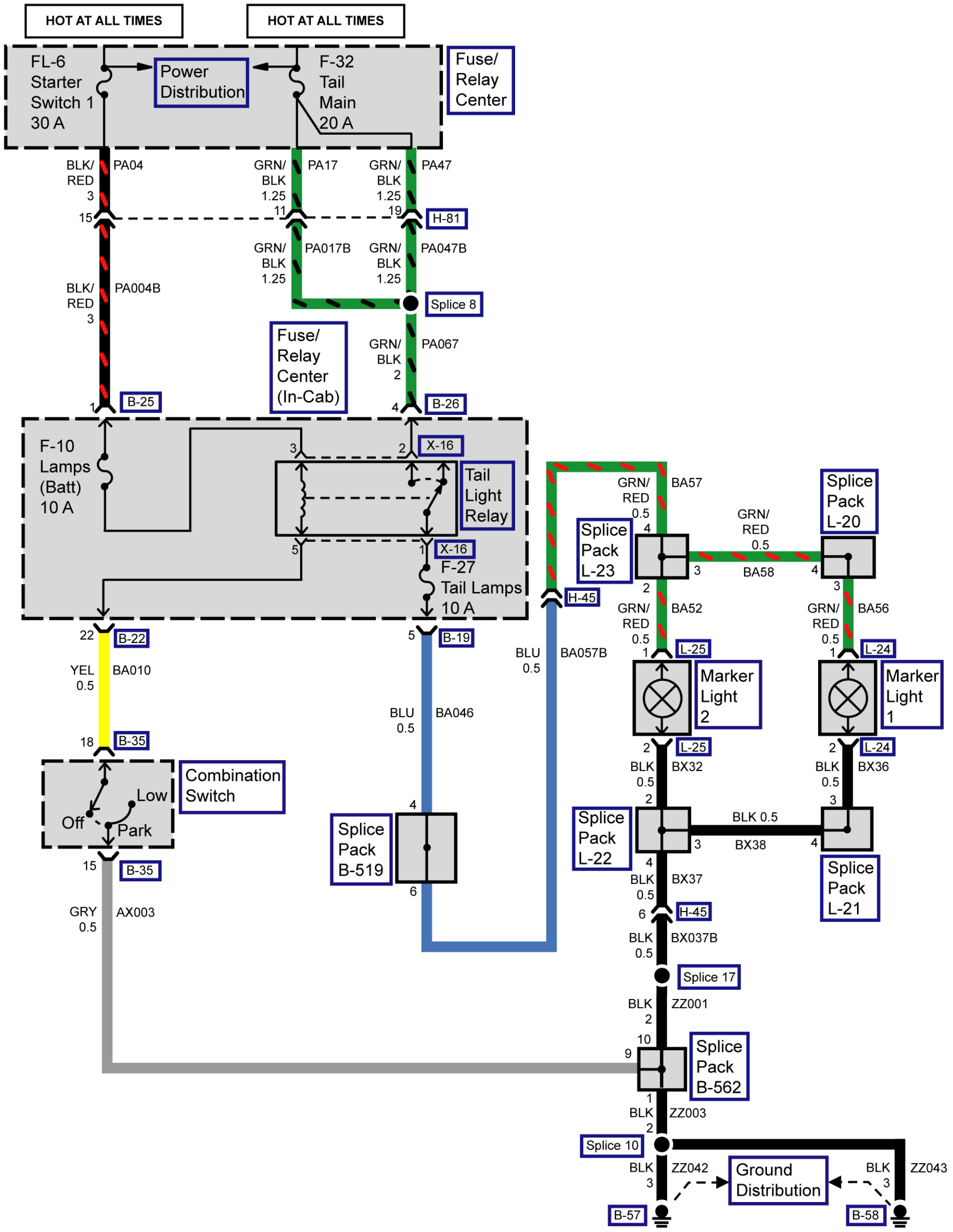

HOT AT ALL TIMES
HOT AT ALL TIMES
FL-6 Starter Switch 1 30 A
Power Distribution
F-32 Tail Main 20 A
Fuse/ Relay Center
BLK/ RED 3
PA04
GRN/ BLK 1.25
PA17
GRN/ BLK 1.25
PA47
15
11
19
H-81
GRN/ BLK 1.25
PA017B
GRN/ BLK 1.25
PA047B
BLK/ RED 3
PA004B
Splice 8
Fuse/ Relay Center (In-Cab)
GRN/ BLK 2
PA067
1
B-25
4
B-26
F-10 Lamps (Batt) 10 A
3
2
X-16
Tail Light Relay
5
1
X-16
F-27 Tail Lamps 10 A
GRN/ RED 0.5
BA57
4
Splice Pack L-23
GRN/ RED 0.5
BA58
3
4
Splice Pack L-20
H-45
2
GRN/ RED 0.5
BA52
3
GRN/ RED 0.5
BA56
22
B-22
5
B-19
BLU 0.5
BA057B
1
L-25
1
L-24
Marker Light 2
Marker Light 1
YEL 0.5
BA010
BLU 0.5
BA046
2
L-25
2
L-24
BLK 0.5
BX32
BLK 0.5
BX36
18
B-35
Combination Switch
Low
Off
Park
2
3
BLK 0.5
BX38
3
4
Splice Pack L-22
Splice Pack L-21
4
Splice Pack B-519
6
15
B-35
4
BLK 0.5
BX37
GRY 0.5
AX003
6
H-45
BLK 0.5
BX037B
Splice 17
BLK 2
ZZ001
10
9
Splice Pack B-562
1
BLK 2
ZZ003
Splice 10
BLK 3
ZZ042
Ground Distribution
BLK 3
ZZ043
B-57
B-58

Figure 34

Roof Clearance Lights

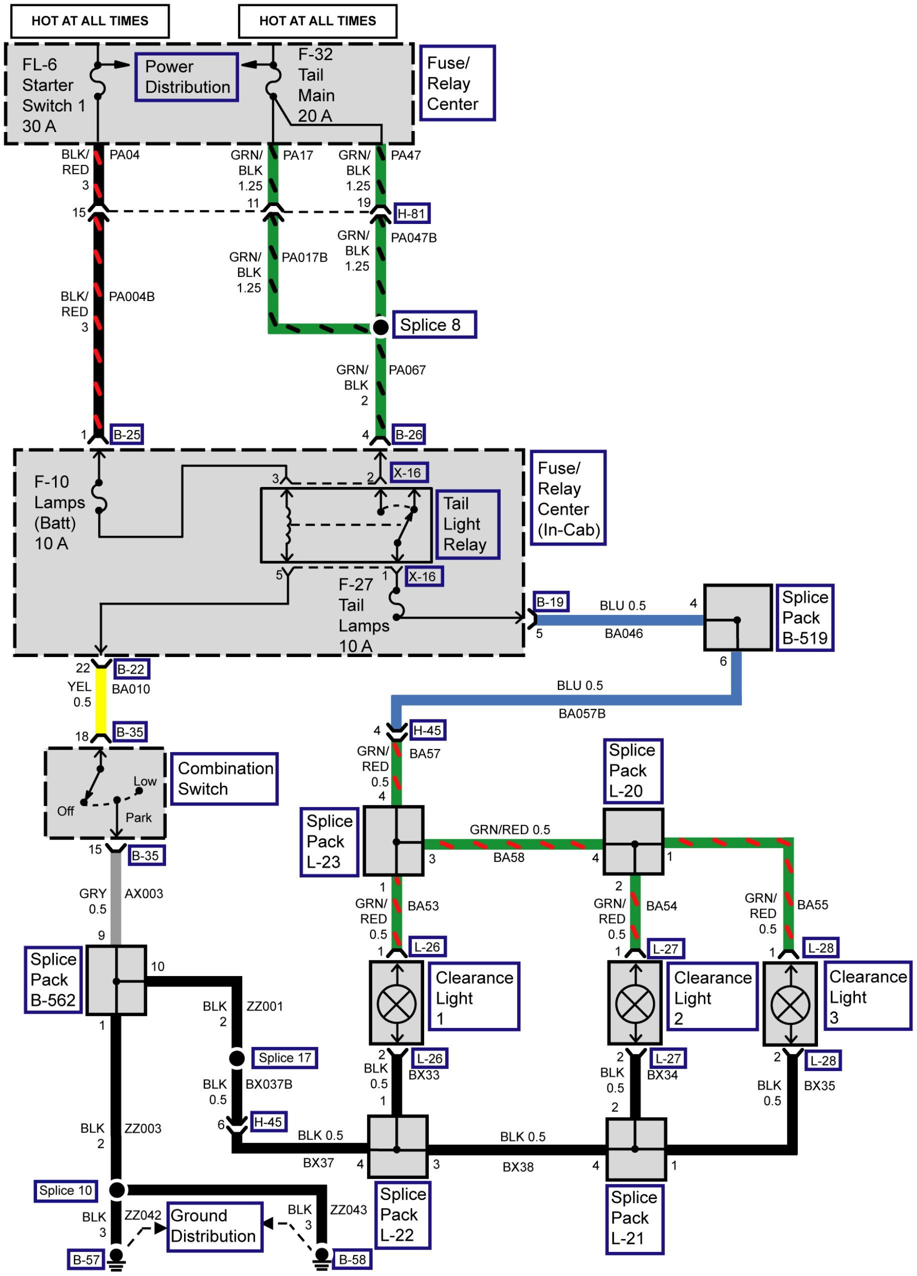

HOT AT ALL TIMES
HOT AT ALL TIMES
FL-6 Starter Switch 1 30 A
Power Distribution
F-32 Tail Main 20 A
Fuse/ Relay Center
BLK/ RED 3
PA04
GRN/ BLK 1.25
PA17
GRN/ BLK 1.25
PA47
15
11
19
H-81
GRN/ BLK 1.25
PA047B
GRN/ BLK 1.25
PA017B
BLK/ RED 3
PA004B
Splice 8
GRN/ BLK 2
PA067
1
B-25
4
B-26
3
2
X-16
F-10 Lamps (Batt) 10 A
Tail Light Relay
Fuse/ Relay Center (In-Cab)
5
1
X-16
F-27 Tail Lamps 10 A
B-19
5
BLU 0.5
BA046
4
6
Splice Pack B-519
22
B-22
YEL 0.5
BA010
BLU 0.5
BA057B
18
B-35
Combination Switch
Low
Off
Park
15
B-35
GRY 0.5
AX003
9
Splice Pack B-562
10
1
BLK 2
ZZ001
Splice 17
BLK 0.5
BX037B
6
H-45
BLK 2
ZZ003
Splice 10
BLK 3
ZZ042
Ground Distribution
BLK 3
ZZ043
B-57
B-58
4
H-45
GRN/ RED 0.5
BA57
4
Splice Pack L-23
GRN/RED 0.5
BA58
3
4
Splice Pack L-20
1
1
GRN/ RED 0.5
BA53
1
L-26
2
GRN/ RED 0.5
BA54
1
L-27
GRN/ RED 0.5
BA55
1
L-28
Clearance Light 1
Clearance Light 2
Clearance Light 3
2
L-26
BLK 0.5
BX33
1
2
L-27
BLK 0.5
BX34
2
2
L-28
BLK 0.5
BX35
BLK 0.5
BX37
4
3
BLK 0.5
BX38
4
1
Splice Pack L-22
Splice Pack L-21

Figure 35

Rear Turn Signal Lights

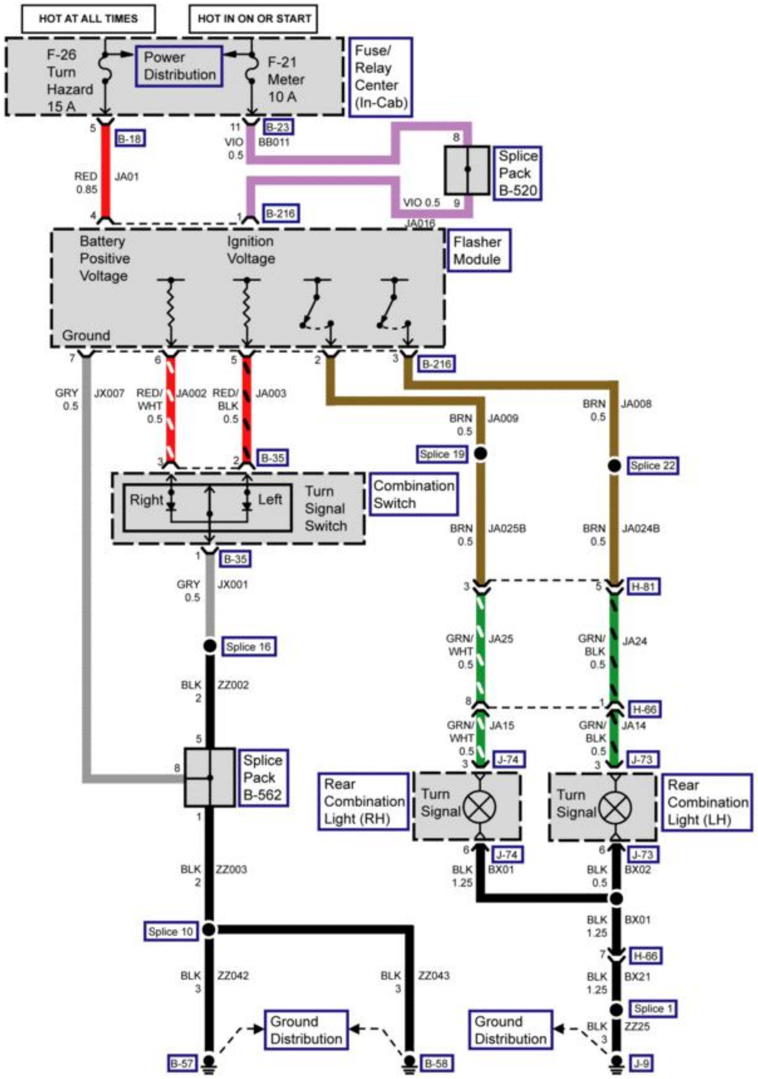
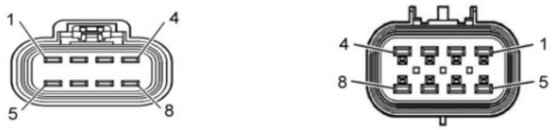

HOT AT ALL TIMES
HOT IN ON OR START
F-26 Turn Hazard 15 A
Power Distribution
F-21 Meter 10 A
Fuse/ Relay Center (In-Cab)
5
B-18
11
B-23
VIO 0.5
BB011
8
Splice Pack B-520
RED 0.85
JA01
VIO 0.5
9
JA016
4
1
B-216
Battery Positive Voltage
Ignition Voltage
Flasher Module
Ground
7
6
5
2
3
B-216
GRY 0.5
JX007
RED/ WHT 0.5
JA002
RED/ BLK 0.5
JA003
BRN 0.5
JA009
BRN 0.5
JA008
Splice 19
Splice 22
3
2
B-35
Right
Left
Turn Signal Switch
Combination Switch
BRN 0.5
JA025B
BRN 0.5
JA024B
1
B-35
GRY 0.5
JX001
3
5
H-81
Splice 16
GRN/ WHT 0.5
JA25
GRN/ BLK 0.5
JA24
BLK 2
ZZ002
8
1
H-66
GRN/ WHT 0.5
JA15
GRN/ BLK 0.5
JA14
5
8
Splice Pack B-562
3
J-74
3
J-73
Rear Combination Light (RH)
Turn Signal
Turn Signal
Rear Combination Light (LH)
1
6
J-74
6
J-73
BLK 1.25
BX01
BLK 0.5
BX02
BLK 2
ZZ003
Splice 10
BLK 1.25
BX01
7
H-66
BLK 3
ZZ042
BLK 3
ZZ043
BLK 1.25
BX21
Splice 1
Ground Distribution
Ground Distribution
BLK 3
ZZ25
B-57
B-58
J-9

Figure 36

H-66 Chassis Harness to the Rear Combination Harness



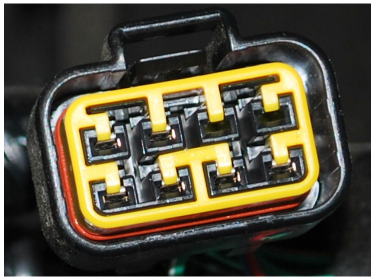
Connector End View

PIN	Wire Color	Circuit Number	Function	PIN	Wire Color	Circuit Number	Function
1	GRN/BLK	JA24	Turn Signal Light Voltage (LH) from Splice Pack B-508	1	GRN/BLK	JA14	Turn Signal Light Voltage (LH) to Rear Combination Light (LH)
2	GRN	CA01	Rear Combination Lights Voltage from Splice Pack B-559	2	GRN	CA01	Rear Combination Lights Voltage to Rear Lights
3-4	-	-	Not Used	3-4	-	-	Not Used
5	GRN/RED	BA02	Voltage from Fuse F-27	5	GRN/RED	BA04	Fuse F-27 Supply Voltage to Rear Lights
6	RED/BLU	KA02	Voltage When in Reverse (Fuse F-18)	6	RED/BLU	KA12	Voltage When in Reverse (Fuse F-18) to Rear Lights
7	BLK	BX21	Ground to Splice 1 (J-9 Ground)	7	BLK	BX01	Ground to Splice 1 (J-9 Ground) to Rear Lighting
8	GRN/WHT	JA25	Turn Signal Light Voltage (RH) from Splice 19	8	GRN/WHT	JA15	Turn Signal Light Voltage (RH) to Rear Combination Light (RH)

Back Up Alarm Connector P/N's

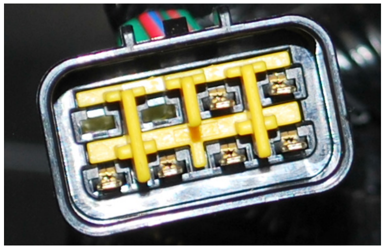
	Part Number	Description		Part Number	Description
Chassis Side Connector	X010369 (Furukawa)	8-Way M (BLK)	Upfitter Installed Connector	X010371 (Furukawa)	8-Way F (BLK)

The connectors that match the end of frame tail and stop lamp harness can now be ordered through GM dealer.



Chassis harness side part number **Contact Dealer**

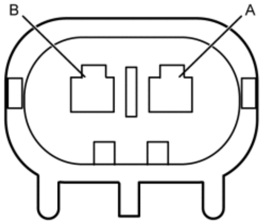
Figure 37

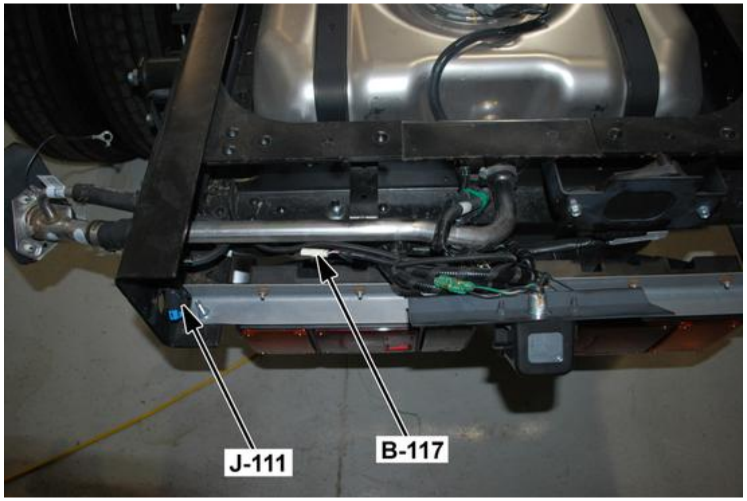


Stop and tail lamp side part number **Contact Dealer**

Figure 38

Back Up Light and Back Up Alarm Circuits

J-111 Back Up Alarm			
 Connector End View			
PIN	Wire Color	Circuit Number	Function
A	BLACK	KX11	Ground to Splice 1 (J-9 Ground)
B	RED/BLUE	KA33	Back Up Alarm Voltage from Fuse F-18 (Voltage Only in Reverse)
Back Up Alarm Connector P/N's			
	Part Number		Description
Chassis Side Connector	Contact Dealer (Delphi)		2-Way M (BLK)



Left Inner Frame Rail, In Front of the Last Crossmember

Figure 39

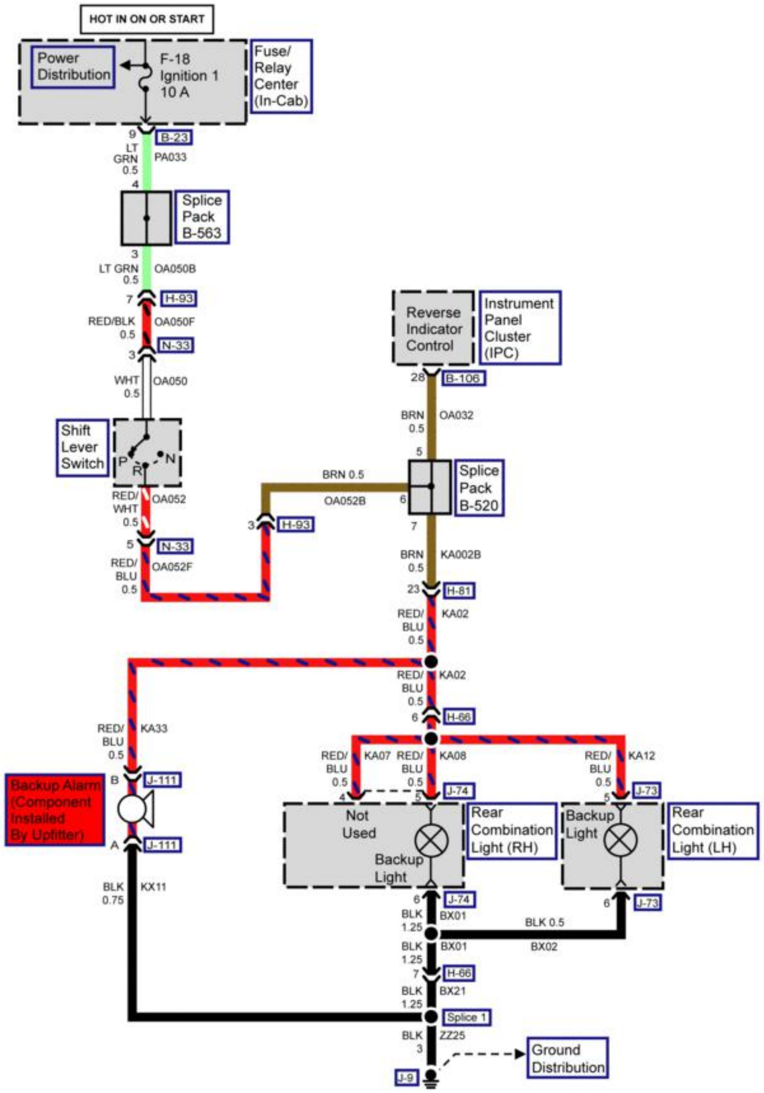

HOT IN ON OR START
Power Distribution
F-18 Ignition 1 10 A
Fuse/ Relay Center (In-Cab)
9
B-23
LT GRN 0.5
PA033
4
Splice Pack B-563
3
LT GRN 0.5
OA050B
7
H-93
RED/BLK 0.5
OA050F
N-33
3
WHT 0.5
OA050
Shift Lever Switch
P
R
N
RED/WHT 0.5
OA052
5
N-33
RED/BLU 0.5
OA052F
3
H-93
BRN 0.5
OA052B
Reverse Indicator Control
Instrument Panel Cluster (IPC)
28
B-106
BRN 0.5
OA032
5
Splice Pack B-520
6
7
BRN 0.5
KA002B
23
H-81
RED/BLU 0.5
KA02
RED/BLU 0.5
KA02
6
H-66
RED/BLU 0.5
KA33
B
J-111
Backup Alarm (Component Installed By Upfitter)
A
J-111
BLK 0.75
KX11
RED/BLU 0.5
KA07
RED/BLU 0.5
KA08
4
5
J-74
Not Used
Backup Light
Rear Combination Light (RH)
RED/BLU 0.5
KA12
5
J-73
Backup Light
Rear Combination Light (LH)
6
J-74
BLK 1.25
BX01
6
J-73
BLK 0.5
BX02
BLK 1.25
BX01
7
H-66
BLK 1.25
BX21
Splice 1
BLK 3
ZZ25
J-9
Ground Distribution

Figure 40

Cigar Lighter Circuits

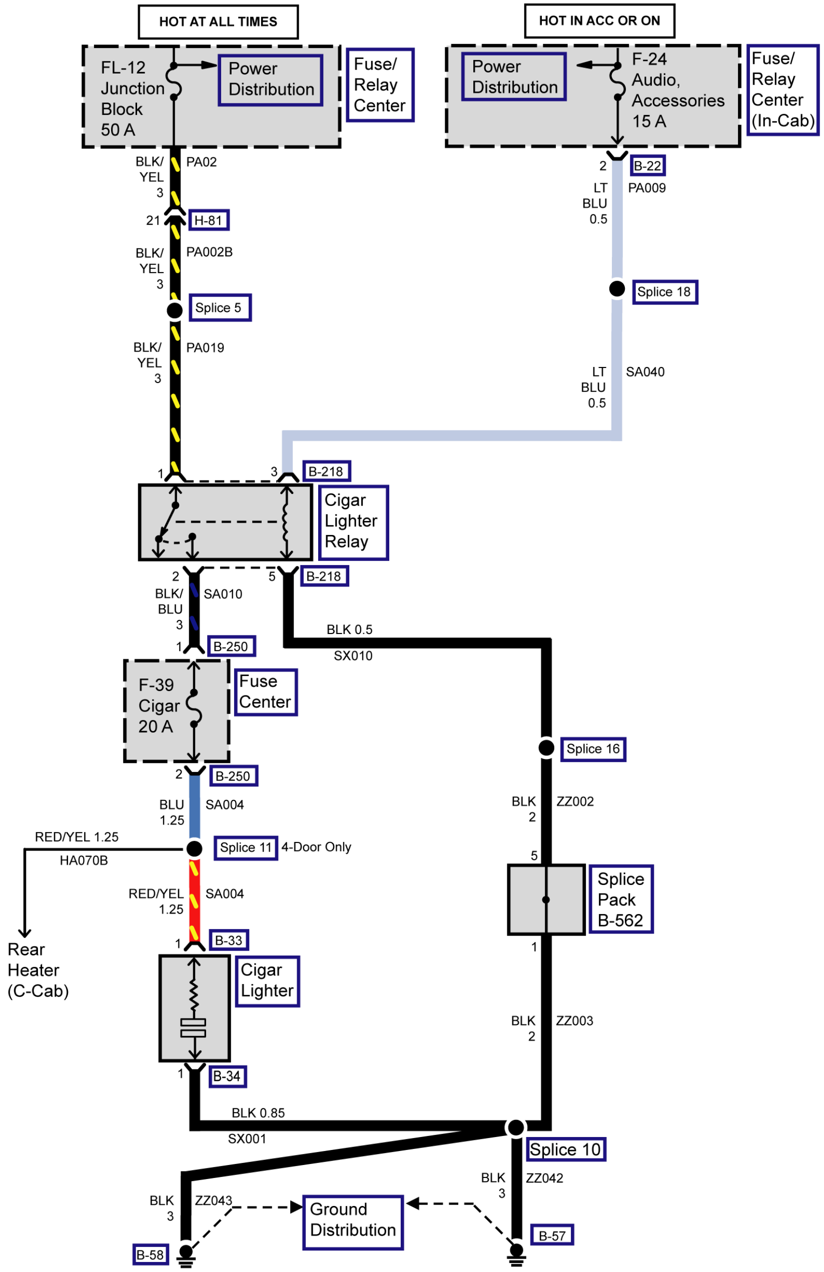

HOT AT ALL TIMES
HOT IN ACC OR ON
FL-12
Junction
Block
50 A
Power
Distribution
Fuse/
Relay
Center
Power
Distribution
F-24
Audio,
Accessories
15 A
Fuse/
Relay
Center
(In-Cab)
BLK/
YEL
3
PA02
2
B-22
LT
BLU
0.5
PA009
21
H-81
BLK/
YEL
3
PA002B
Splice 5
Splice 18
BLK/
YEL
3
PA019
LT
BLU
0.5
SA040
1
3
B-218
Cigar
Lighter
Relay
2
5
B-218
BLK/
BLU
3
SA010
BLK 0.5
SX010
1
B-250
F-39
Cigar
20 A
Fuse
Center
Splice 16
2
B-250
BLU
1.25
SA004
BLK
2
ZZ002
RED/YEL 1.25
HA070B
Splice 11
4-Door Only
5
Splice
Pack
B-562
RED/YEL
1.25
SA004
1
B-33
1
Rear
Heater
(C-Cab)
Cigar
Lighter
BLK
2
ZZ003
1
B-34
BLK 0.85
SX001
Splice 10
BLK
3
ZZ043
Ground
Distribution
BLK
3
ZZ042
B-58
B-57

Figure 41

Radio Circuits without Backup Camera

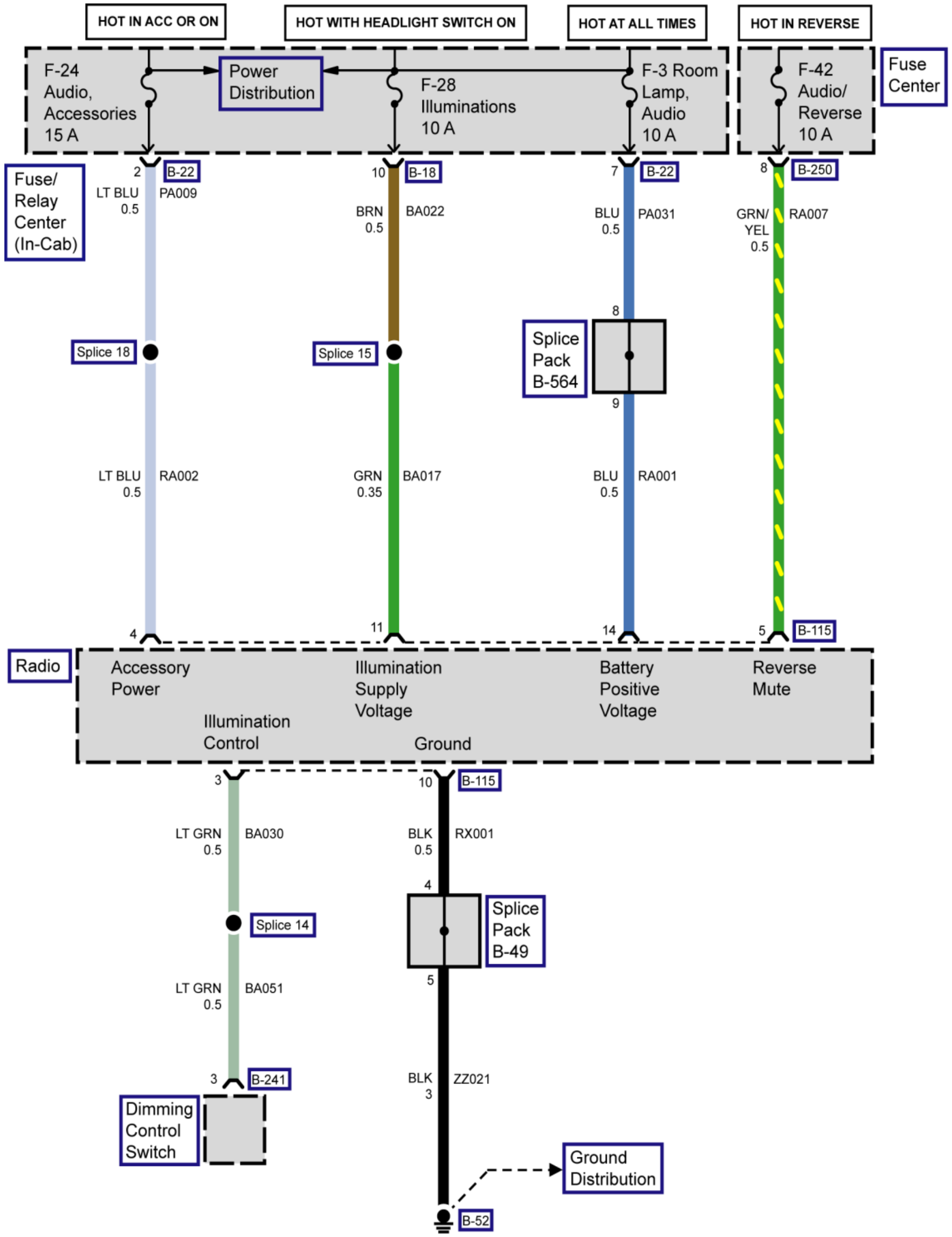

HOT IN ACC OR ON
HOT WITH HEADLIGHT SWITCH ON
HOT AT ALL TIMES
HOT IN REVERSE
F-24 Audio, Accessories 15 A
Power Distribution
F-28 Illuminations 10 A
F-3 Room Lamp, Audio 10 A
F-42 Audio/ Reverse 10 A
Fuse Center
Fuse/ Relay Center (In-Cab)
2
B-22
LT BLU 0.5
PA009
10
B-18
BRN 0.5
BA022
7
B-22
BLU 0.5
PA031
8
B-250
GRN/ YEL 0.5
RA007
Splice 18
Splice 15
8
Splice Pack B-564
9
LT BLU 0.5
RA002
GRN 0.35
BA017
BLU 0.5
RA001
4
11
14
5
B-115
Radio
Accessory Power
Illumination Supply Voltage
Battery Positive Voltage
Reverse Mute
Illumination Control
Ground
3
10
B-115
LT GRN 0.5
BA030
BLK 0.5
RX001
Splice 14
4
Splice Pack B-49
5
LT GRN 0.5
BA051
3
B-241
BLK 3
ZZ021
Dimming Control Switch
Ground Distribution
B-52

Figure 42

Radio Circuits with Backup Camera

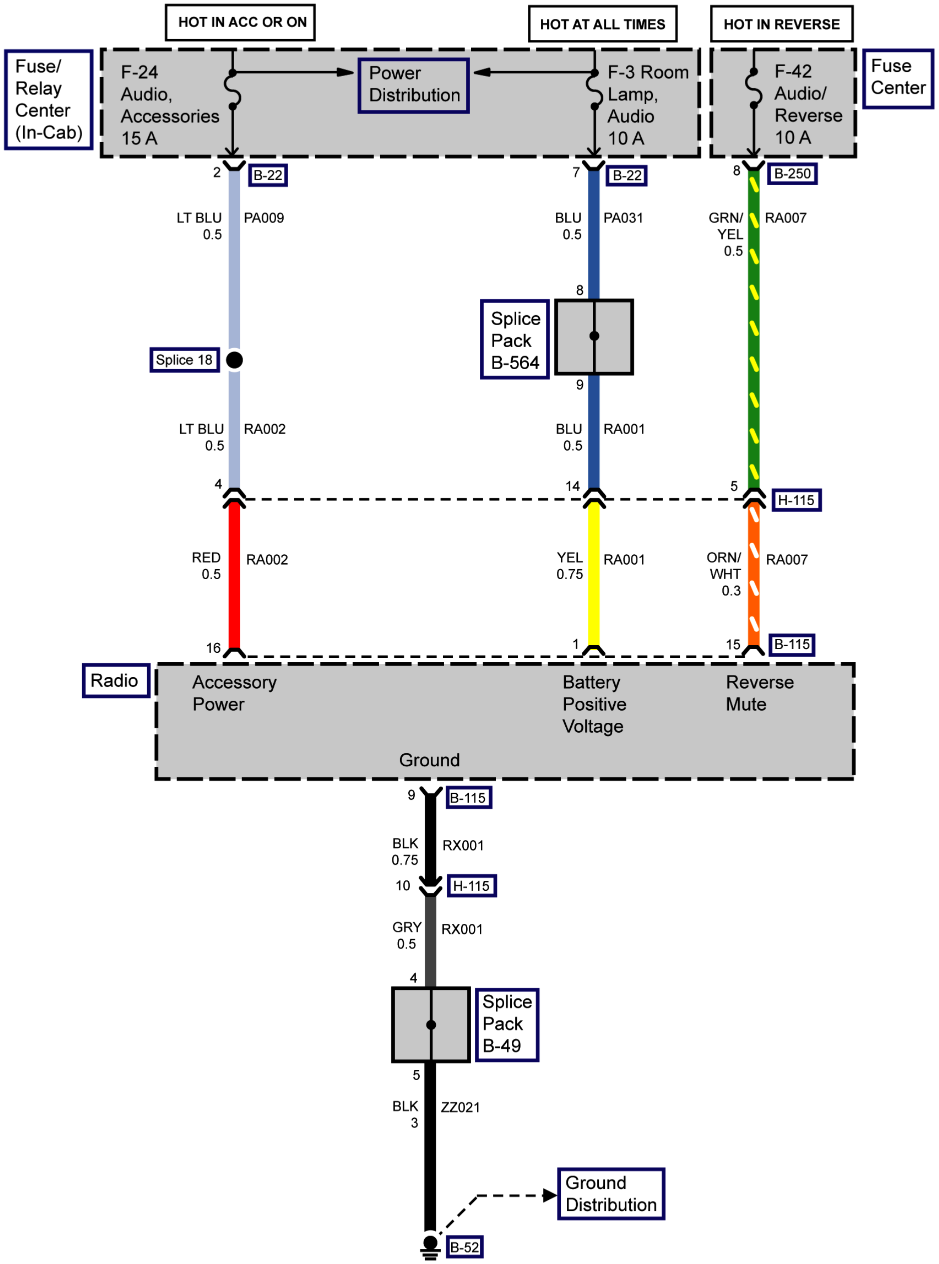
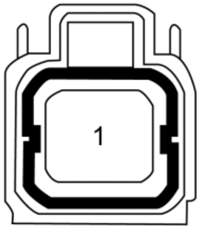

HOT IN ACC OR ON
HOT AT ALL TIMES
HOT IN REVERSE
Fuse/ Relay Center (In-Cab)
F-24 Audio, Accessories 15 A
Power Distribution
F-3 Room Lamp, Audio 10 A
F-42 Audio/ Reverse 10 A
Fuse Center
2
B-22
7
B-22
8
B-250
LT BLU 0.5
PA009
BLU 0.5
PA031
GRN/ YEL 0.5
RA007
8
Splice Pack B-564
9
Splice 18
LT BLU 0.5
RA002
BLU 0.5
RA001
4
14
5
H-115
RED 0.5
RA002
YEL 0.75
RA001
ORN/ WHT 0.3
RA007
16
1
15
B-115
Radio
Accessory Power
Battery Positive Voltage
Reverse Mute
Ground
9
B-115
BLK 0.75
RX001
10
H-115
GRY 0.5
RX001
4
Splice Pack B-49
5
BLK 3
ZZ021
Ground Distribution
B-52

Figure 43

Auxiliary Power Source Circuit Diagram

B-220 Power Source

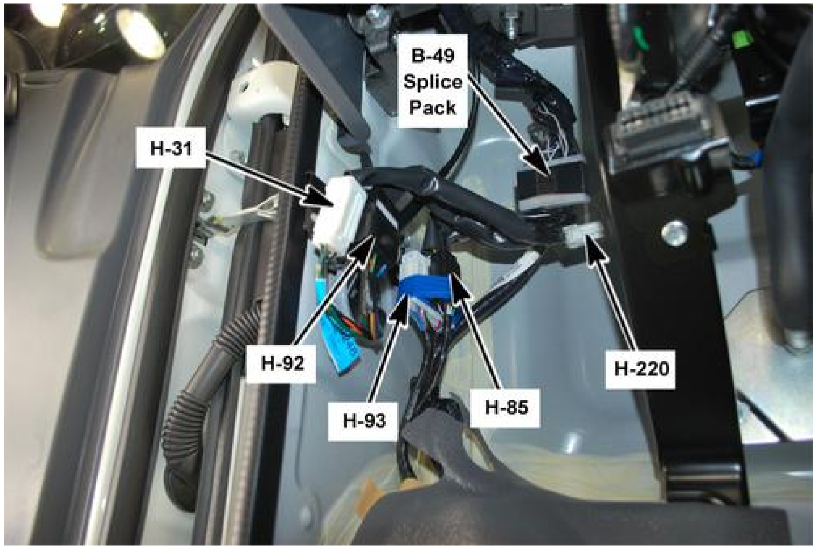


Connector End View

PIN	Wire Color	Circuit Number	Function
P-1	LHT GRN	SA002	Power Source Supply Voltage Fuse F-41

Connector Part Information

	Part Number	Description
Chassis Side Connector	7323-6317 (Yazaki)	1-Way F (WHT)


B-49 Splice Pack
H-31
H-92
H-93
H-85
H-220

On the Left Side of the I/P, to the Left of the Steering Column

Figure 44

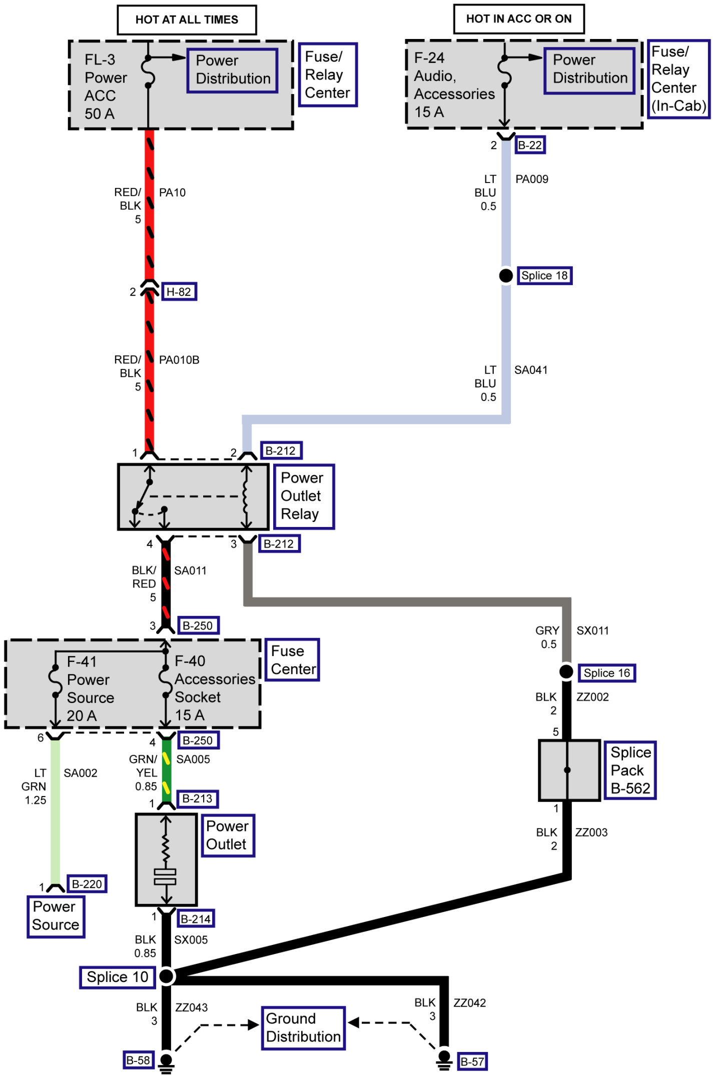
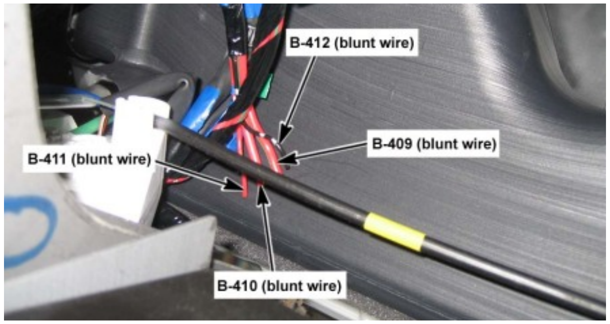

HOT AT ALL TIMES
FL-3 Power ACC 50 A
Power Distribution
Fuse/ Relay Center
HOT IN ACC OR ON
F-24 Audio, Accessories 15 A
Power Distribution
Fuse/ Relay Center (In-Cab)
2
B-22
LT BLU 0.5
PA009
RED/ BLK 5
PA10
Splice 18
2
H-82
RED/ BLK 5
PA010B
LT BLU 0.5
SA041
1
2
B-212
Power Outlet Relay
4
3
B-212
BLK/ RED 5
SA011
3
B-250
GRY 0.5
SX011
F-41 Power Source 20 A
F-40 Accessories Socket 15 A
Fuse Center
Splice 16
BLK 2
ZZ002
6
4
B-250
LT GRN 1.25
SA002
GRN/ YEL 0.85
SA005
5
Splice Pack B-562
1
B-213
Power Outlet
1
BLK 2
ZZ003
1
B-220
Power Source
1
B-214
BLK 0.85
SX005
Splice 10
BLK 3
ZZ043
Ground Distribution
BLK 3
ZZ042
B-58
B-57

Figure 45

Trailer Brake Controller Wiring and Activation

B-409, B-410, B-411 & B-412: Electrical Trailer Brake Controller (Upfitter Installed)

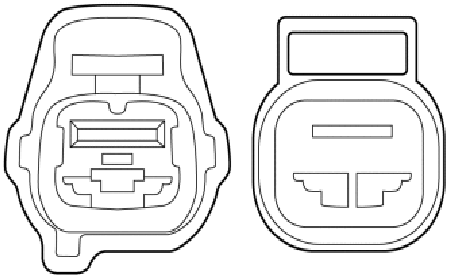
PIN	Wire Color	Circuit Number	Function
B-409	RED/GRN	MF010B	Voltage from Fuse FL-4
B-410	RED	MF011B	ETB Voltage Supply
B-411	RED	MF012B	Voltage from Trailer Brake Relay (Switched Output)
B-412	BLK	MU002B	Ground to Splice 10 (B-57 and B-58 Ground)


B-412 (blunt wire)
B-409 (blunt wire)
B-411 (blunt wire)
B-410 (blunt wire)

Connector Part Information

	Part Number	Description
Chassis Side Connector	N/A	Blunt Wire End

B-413: Electrical Trailer Brake Controller (Upfitter Installed)



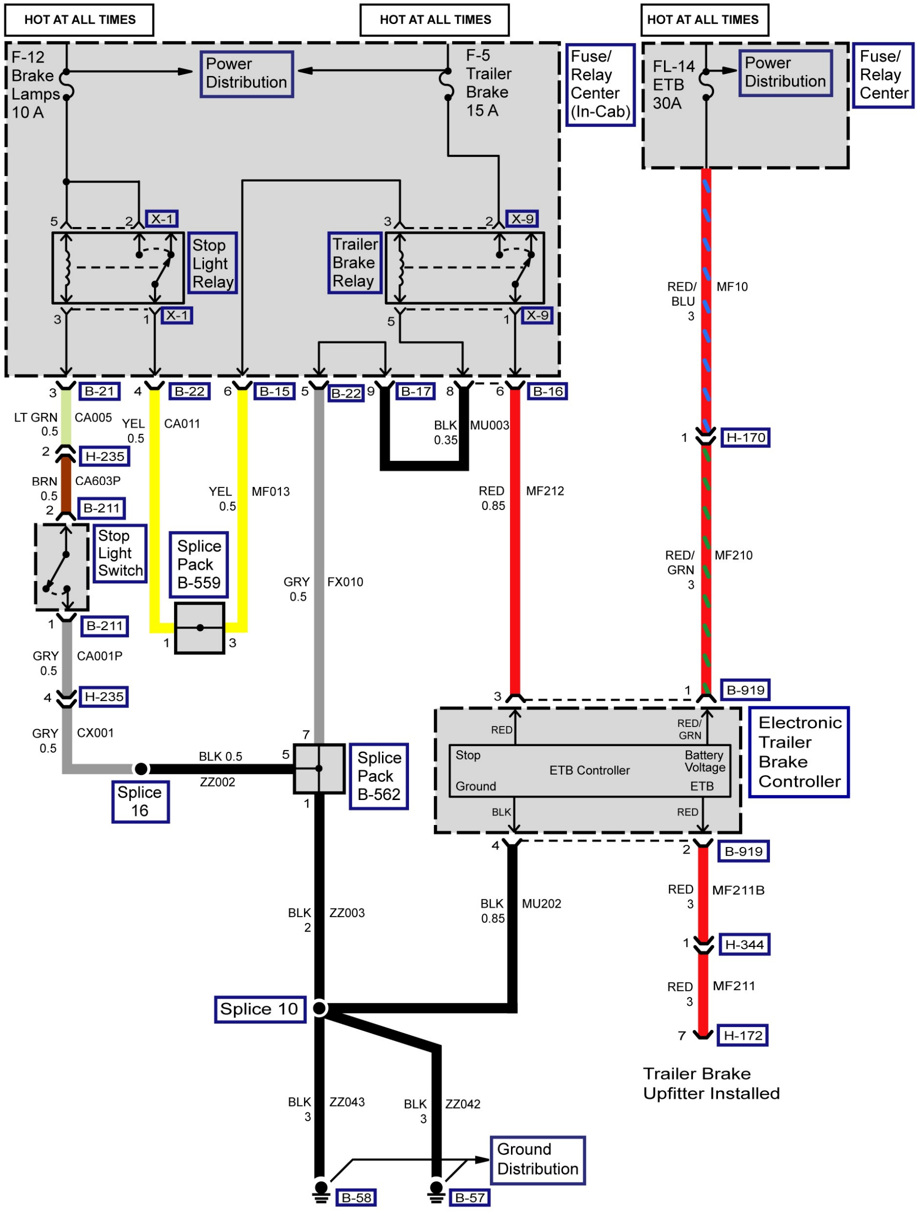
Connector End View

PIN	Wire Color	Circuit Number	Function
1	RED	MF011B	ETB Voltage Supply

Connector Part Information

	Part Number	Description
Chassis Side Connector	Contact Dealer	1-Way M (LT GRY)

Figure 46


HOT AT ALL TIMES
HOT AT ALL TIMES
HOT AT ALL TIMES
F-12 Brake Lamps 10 A
Power Distribution
F-5 Trailer Brake 15 A
Fuse/ Relay Center (In-Cab)
FL-14 ETB 30A
Power Distribution
Fuse/ Relay Center
5
2
X-1
Stop Light Relay
3
1
X-1
Trailer Brake Relay
3
2
X-9
5
1
X-9
3 B-21
4 B-22
6 B-15
5 B-22
9 B-17
8
6 B-16
LT GRN 0.5 CA005
YEL 0.5 CA011
BLK 0.35 MU003
RED/ BLU 3 MF10
1 H-170
2 H-235
BRN 0.5 CA603P
2 B-211
YEL 0.5 MF013
RED 0.85 MF212
Stop Light Switch
Splice Pack B-559
1
3
RED/ GRN 3 MF210
GRY 0.5 FX010
1 B-211
GRY 0.5 CA001P
4 H-235
3
1 B-919
GRY 0.5 CX001
7
BLK 0.5
5
ZZ002
Splice 16
Splice Pack B-562
1
RED
RED/ GRN
Stop
ETB Controller
Battery Voltage
Ground
ETB
BLK
RED
Electronic Trailer Brake Controller
4
2 B-919
BLK 2 ZZ003
BLK 0.85 MU202
RED 3 MF211B
1 H-344
Splice 10
RED 3 MF211
7 H-172
BLK 3 ZZ043
BLK 3 ZZ042
Ground Distribution
B-58
B-57

Trailer Brake Upfitter Installed

Figure 47

Gas Trailer Brake Controller Wiring and Activation

Introduction:

From model year 2009 Model Year 3500 HG / 4500 HG Gas chassis feature integrated electronic trailer brake controller wiring and a dedicated chassis wiring hamess for control of trailer stop, turn, and tail lamps. ***Note: the electronic brake controller is not supplied with the vehicle.***

Integrated Electronic Brake Controller Wiring and Activation:

Wires for the electronic trailer brake controller are located behind the radio. To access these wire, remove the radio and DIN pocket from the dash, and pull out the wiring pigtail for the trailer brake controller.

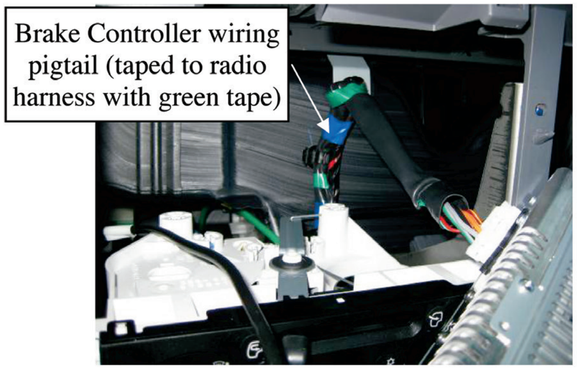

Brake Controller wiring pigtail (taped to radio harness with green tape)

Figure 48

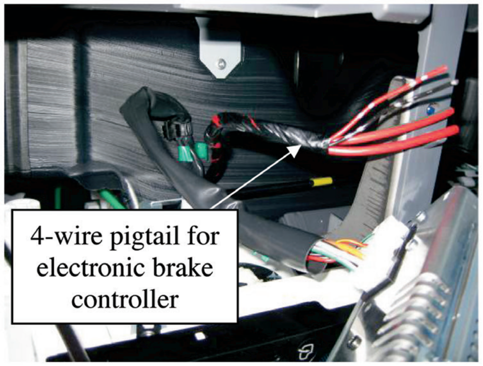


Figure 49

Wire Chart for the brake controller pigtail:

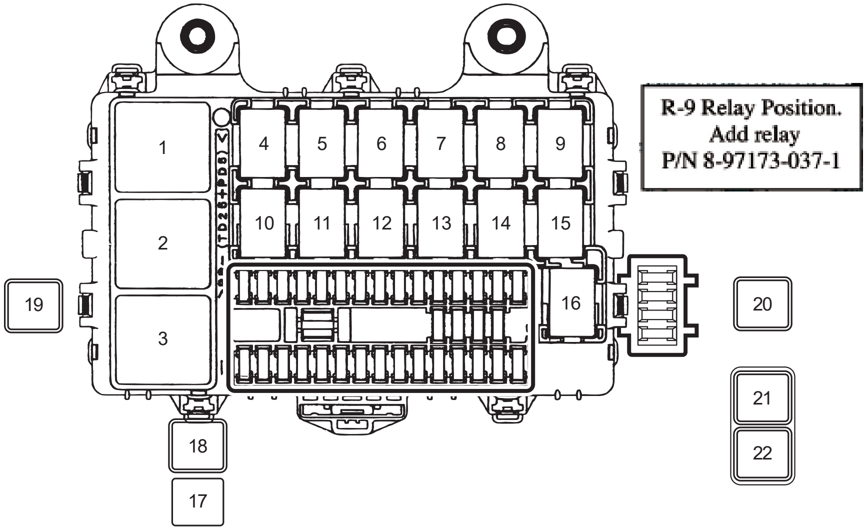
Wire#	Wire Color	Wire Size (mm^2)	Wire Size (AWG Approx)	Description/Notes
1	Red/Green	3	12	Supply power for brake controller (Fused to battery 20A; continuous max)
2	Red	3	12	Output signal from brake controller (rated max 20A continuous)
3	Red	0.85	18	Brake lamp signal (12V on when brake applied. Activated by relay R-9)
4	Black	0.85	18	Ground (max continuous current 10A)

The brake signal wire (Wire # 3) is activated by installation of a relay in the "R-9" position in the center relay console located in the center of the dash just above floor level.

Figure 50

Gas Trailer Brake Controller Wiring and Activation

The R9 rela is not supplied with the vehicle. The relay can be ordered from your GM dealer. R-9 relay position:



R-9 Relay Position.
Add relay
P/N 8-97173-037-1

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
(TD26+PD6)

Figure 51

2026 Chevrolet Low Cab Forward

Gas Trailer Brake Controller Wiring and Activation

The power supply for the trailer brake controller (Wire #1) is not energized from the factory.
To power the brake controller, the brake controller harness power supply must be plugged in to the chassis power supply plug.

1) Locate the trailer brake controller power supply harness under the cab, behind the passenger-side head light:

2) Remove tape to expose the 2 connectors. The Grey connector is used to supply power to the trailer brake controller (Wire #1). This connector plugs in to the chassis trailer brake controller power supply. The Black connector is the output signal wire from the trailer brake controller (Wire #2).

3) Unplug the harness. Connect the Black connector (Wire #2) to an extension wire of suitable length and route the wire to the rear of the vehicle. This wire is the trailer brake controller output signal wire.

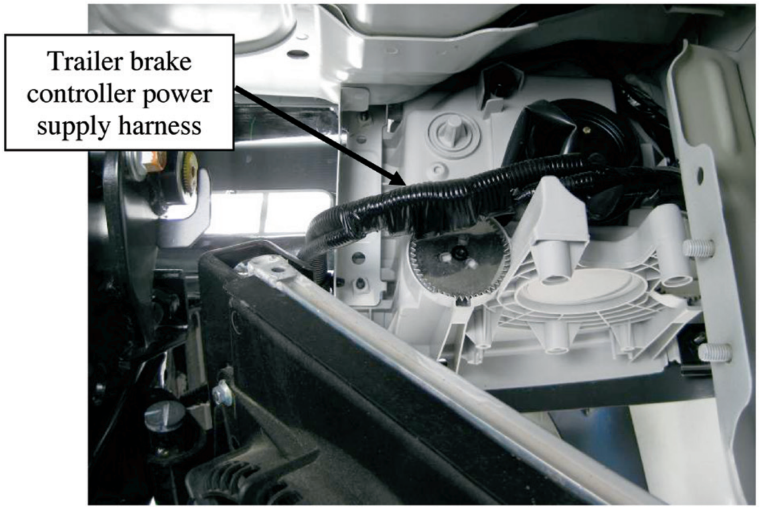


Figure 52

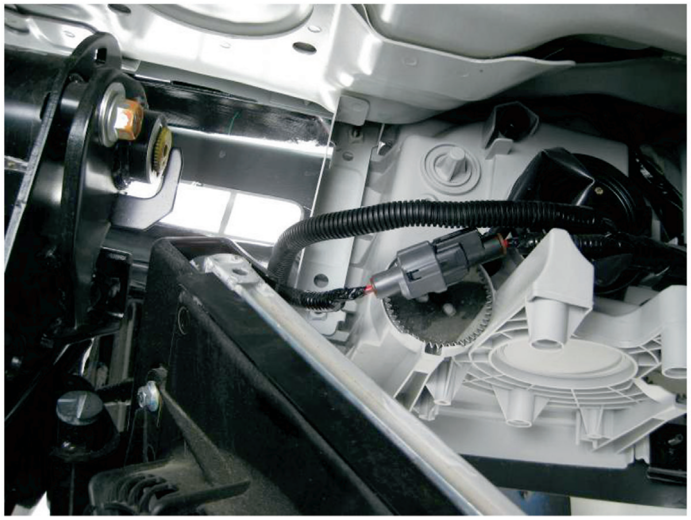
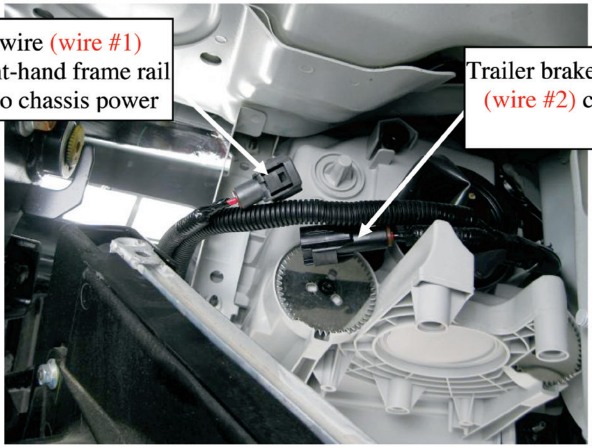


Figure 53

Gas Trailer Brake Controller Wiring and Activation

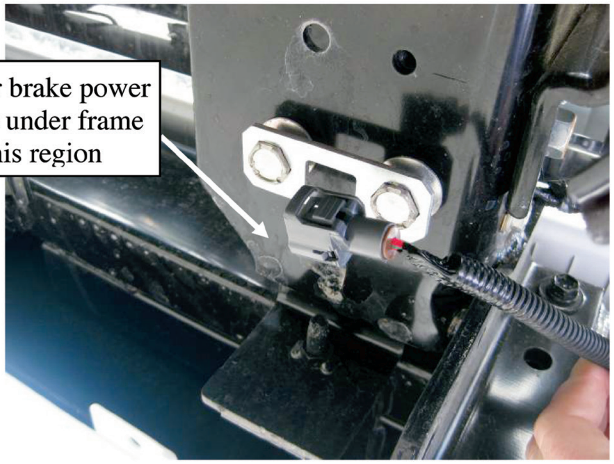
4) Remove the tape from the wire with the Grey connector (Wire #1) and route this wire underneath of the right hand frame rail.



Route wire (wire #1) under the right-hand frame rail and plug in to chassis power

Trailer brake controller output signal (wire #2) can be picked up at this connector

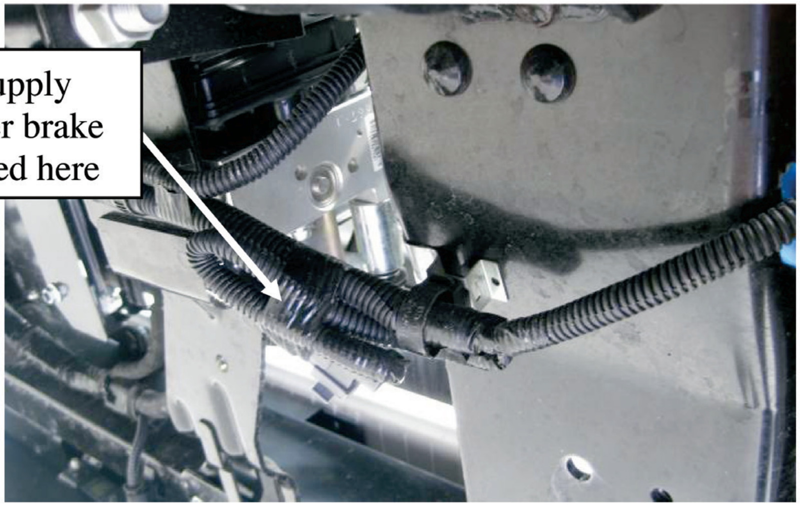
Figure 54



Route trailer brake power supply wire under frame rail in this region

Figure 55

5) Locate the chassis side power supply harness. This connector is located just inboard of the right hand frame rail, beneath the ABS control module.



Chassis power supply connector for trailer brake controller is bundled here

Figure 56

Gas Trailer Brake Controller Wiring and Activation

6) Remove tape and route chassis side power supply wire to brake controller power supply wire:

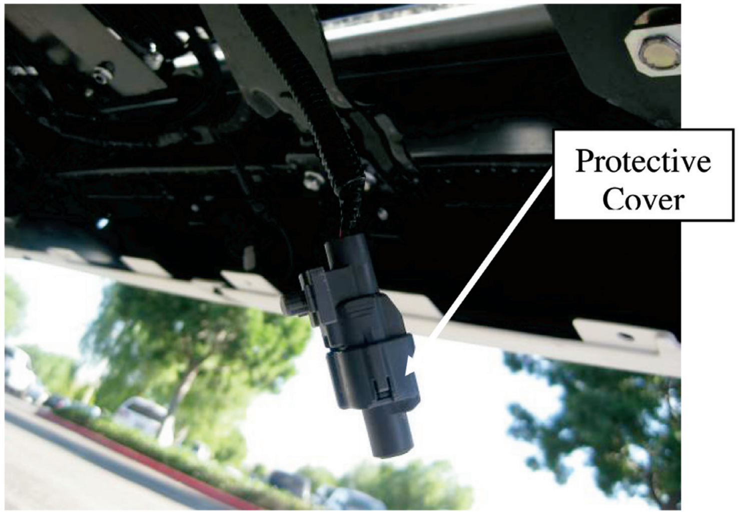


Figure 57

7) Remove protective cover, and plug chassis side power supply harness into electronic trailer brake controller power supply connector (Wire #1). Secure harness to chassis with suitable tie strap.

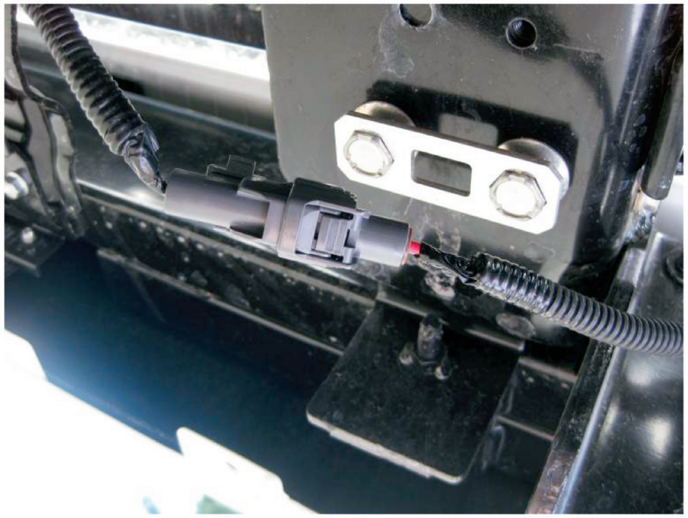


Figure 58

Power, Ground, and Trailer Connector

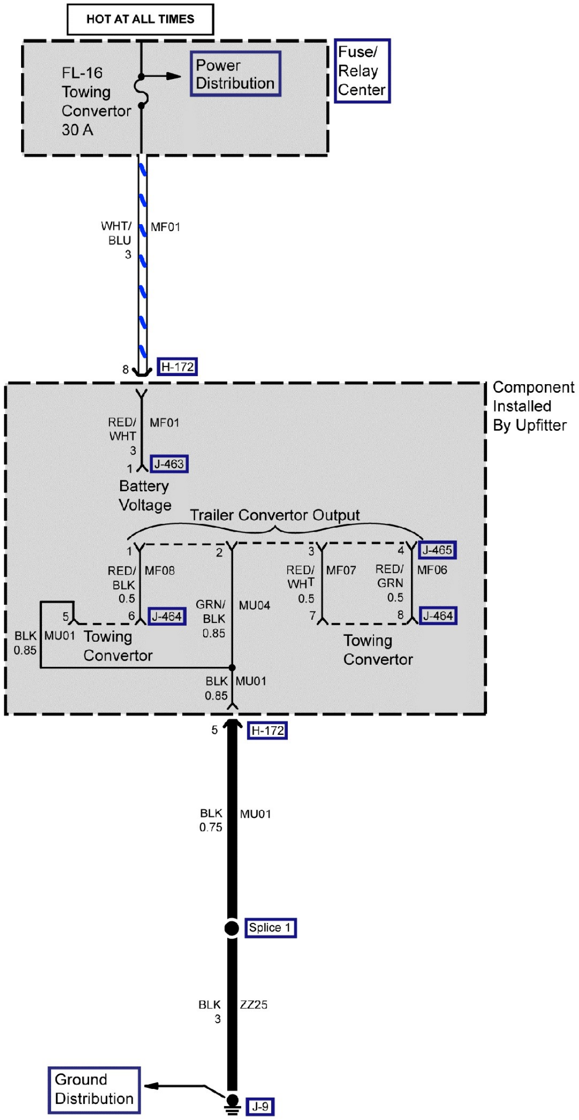
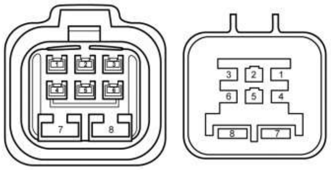

HOT AT ALL TIMES
FL-16
Towing
Convertor
30 A
Power
Distribution
Fuse/
Relay
Center
WHT/
BLU
3
MF01
8
H-172
Component
Installed
By Upfitter
RED/
WHT
3
MF01
1
J-463
Battery
Voltage
Trailer Convertor Output
1
2
3
4
J-465
RED/
BLK
0.5
MF08
GRN/
BLK
0.85
MU04
RED/
WHT
0.5
MF07
RED/
GRN
0.5
MF06
5
6
J-464
7
8
J-464
BLK
0.85
MU01
Towing
Convertor
Towing
Convertor
BLK
0.85
MU01
5
H-172
BLK
0.75
MU01
Splice 1
BLK
3
ZZ25
Ground
Distribution
J-9

Figure 59

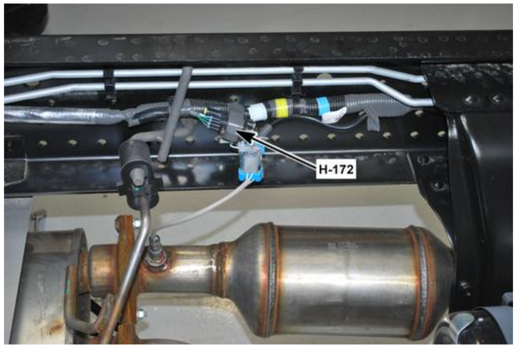
H-172 Chassis Harness to Towing Converter Connector

The H-172 wiring harness allows upfitters to control trailer lighting functions without having to splice into the vehicle tail lamp harness. The connector is located on the left hand frame rail (driver's side), to the rear of the transmission cross member. The connector wires are the standard 4-wire electrical light system that is used on the chassis (separate stop and turn light). If the trailer has a 3-wire electrical system (combined stop and turn light) a heavy duty tail light converter box will be necessary for proper trailer light integration.



Part Information	● **R020050 Furukawa** ● **8-Way F (BLK)** ● **Upfitter Installed**			**Part Information**	● **R020054 Furukawa** ● **8-Way M (BLK)**		
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
1	GRN	MF02	Stop Light Voltage to Towing Converter	1	GRN	MF02	Stop Light Voltage from Switch
2	GRN/RED	MF03	Tail Light Voltage to Towing Converter	2	GRN/RED	MF03	Tail Light Voltage from Fuse F-27
3	GRN/BLK	MF04	Left Turn Signal Voltage to Towing Converter	3	GRN/BLK	MF04	Left Turn Signal Voltage from Flasher Module
4	GRN/WHT	MF05	Right Turn Signal Voltage to Towing Converter	4	GRN/WHT	MF05	Right Turn Signal Voltage from Flasher Module
5	BLK	MU01	Ground to Splice 1 to Towing Converter	5	BLK	MU01	Ground to Splice 1 to J-9 Ground
6	-	-	Not Used	6	-	-	Not Used
7 (MY 2024)	-	-	Not Used	7 (MY 2024)	RED	MF211B	Trailer Brake Control
8	RED/WHT	MF01	Voltage from Fuse FL-16 to Towing Converter	8	WHT/BLU	MF01	Voltage from Fuse FL-16

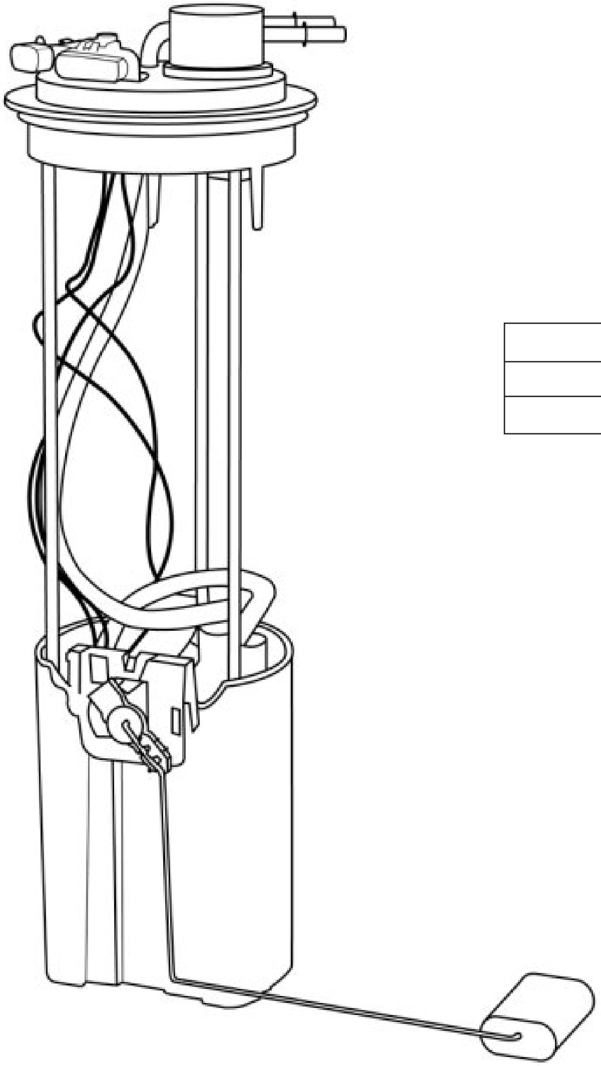
Figure 60



Left Inner Side of the Frame Rail, Behind the Transmission Crossmember

Figure 61

Fuel Tank Sending Unit Resistance Values



Float Position	Standard Resistance (ohms)
Empty Stop	248.5
Full Stop	40

Figure 62

Back Up Camera Installation Information

Back Up Camera Installation Overview

- The Alpine HCE-C1100 Back Up Camera is available with RPO code I2V (Audio system with 7" diagonal color touch screen with backup camera).
- RPO codes I1V (Audio system with 7" diagonal color touch screen) and I2V (Audio system with 7" diagonal color touch screen with backup camera) will both include a pre-wired camera input connection at the end of the chassis frame. (Figure 63)

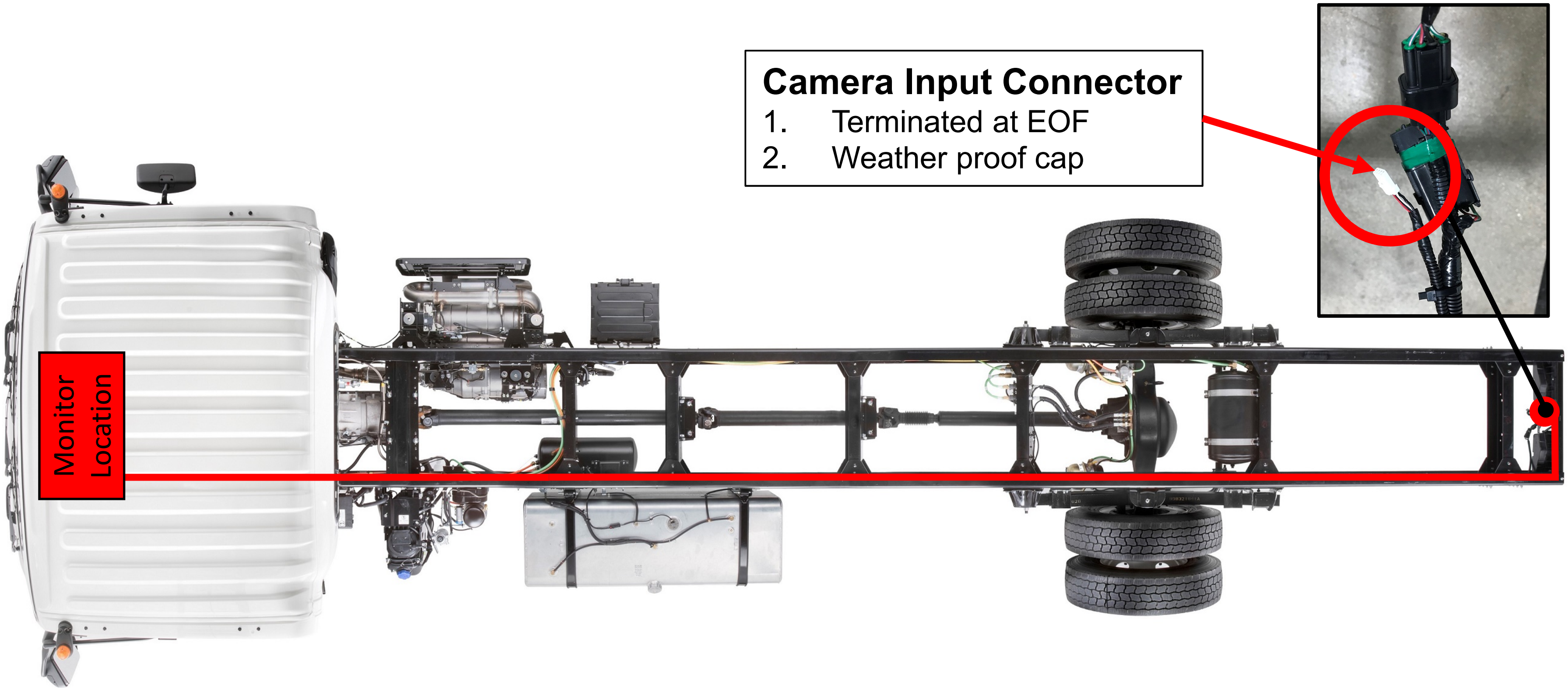

Camera Input Connector
1. Terminated at EOF
2. Weather proof cap
Monitor Location

Figure 63
Camera Installation Overview

Back Up Camera Installation Kit Part Numbers

KIT PART NUMBER:	Contact Dealer		
NO.	PART NUMBER	DESCRIPTION	QTY
1	8975438760	HCE-C1100 Back Up Camera	1
2	8975438730	Camera Bracket/Shroud	1
3	8975438750	23' Camera Extension Harness	1

Figure 64 – Camera Install Kit Part Numbers

- When RPO code I2V (Audio system with 7" diagonal color touch screen with backup camera) is selected, the Back Up Camera Kit will be shipped in the cab, in a poly bag, band tied to the center seat. (Figure 67).
- The Back Up Camera Kit will include the parts listed in Figure 64, provided in a sealed package. The package also includes a piece of shrink tube that should be used to protect the connection between the camera pigtail and the 23' extension harness (see the circled location in Figure 66 below).

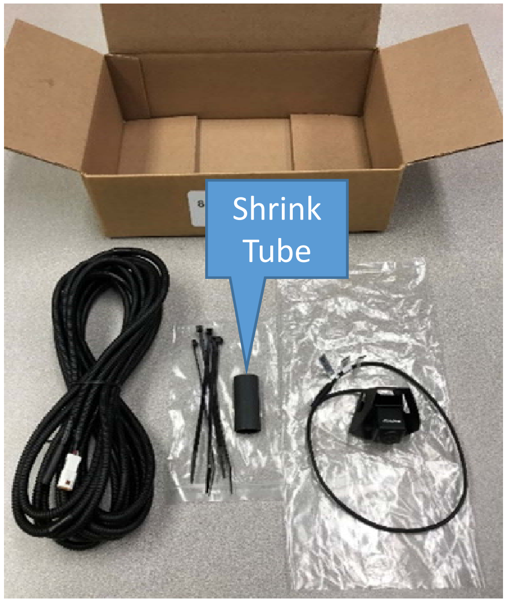


Figure 65
Camera Install Kit

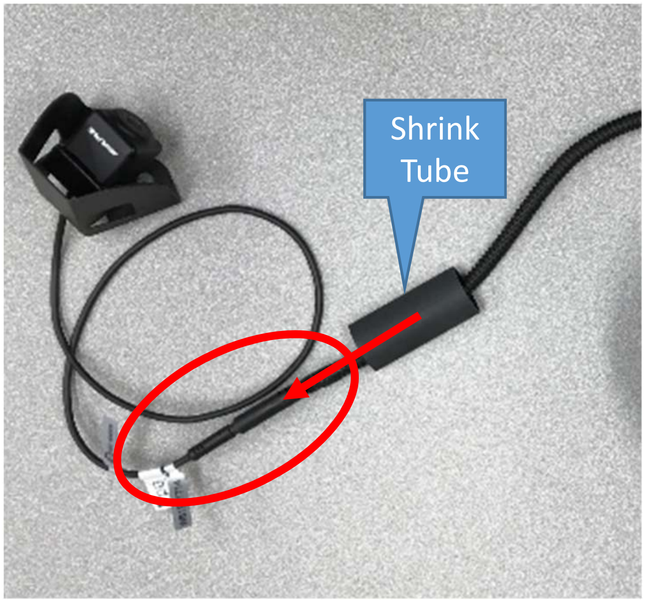


Figure 66
Camera Install Kit Shrink Tube Installation

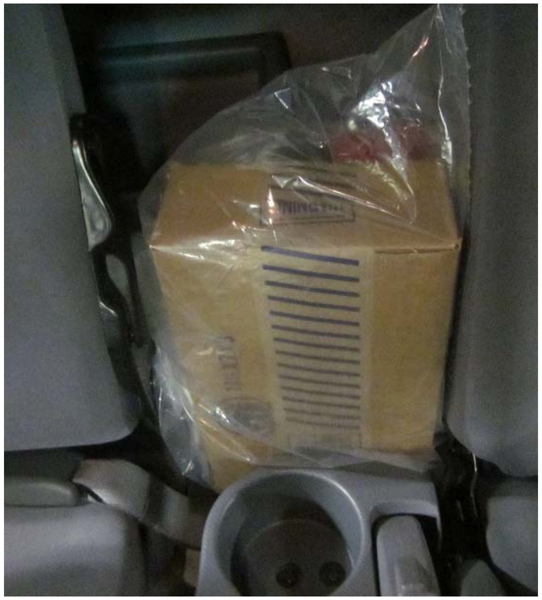


Figure 67
Camera Install Kit Shipping Location

Back Up Camera Mounting Information

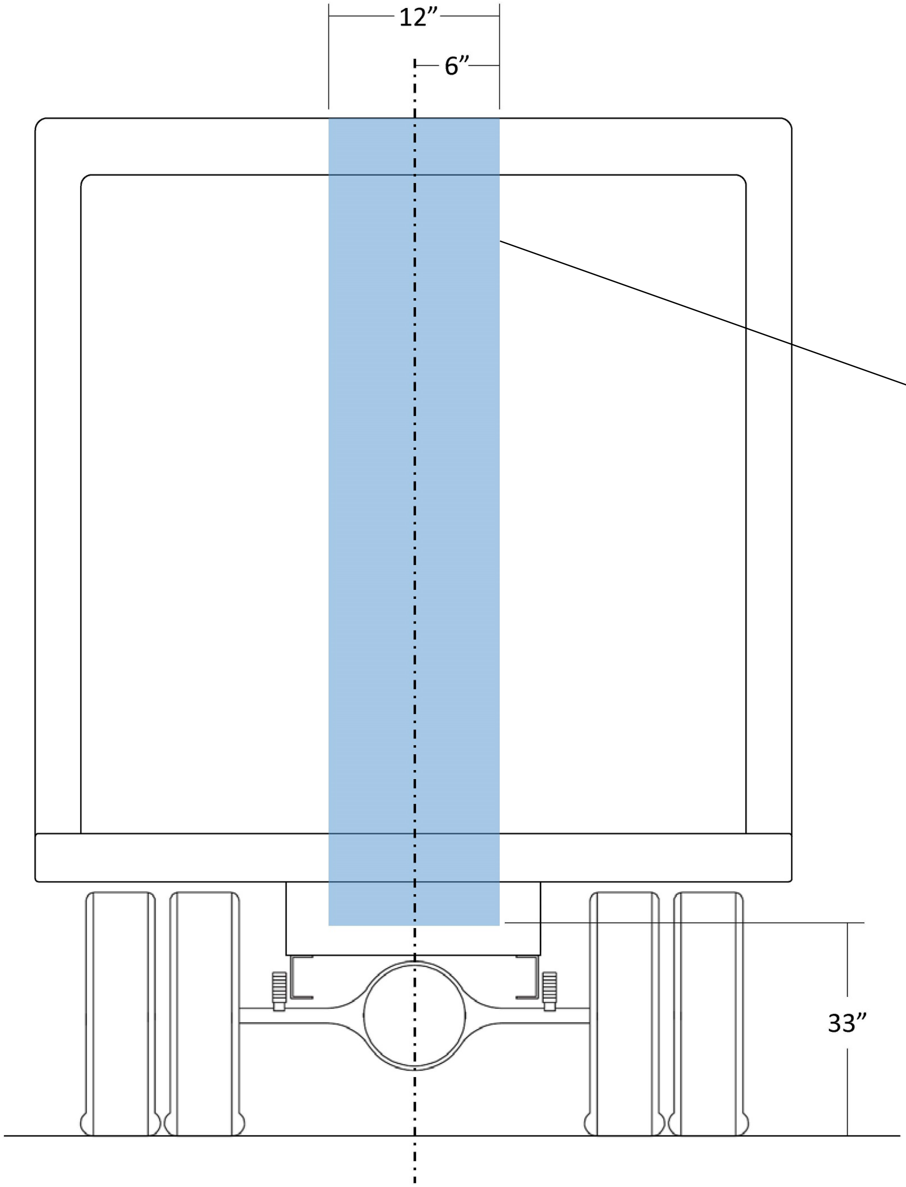


Figure 68
Camera Mounting Area

HCE-C1100 Camera Mounting
Plate Hole Pattern

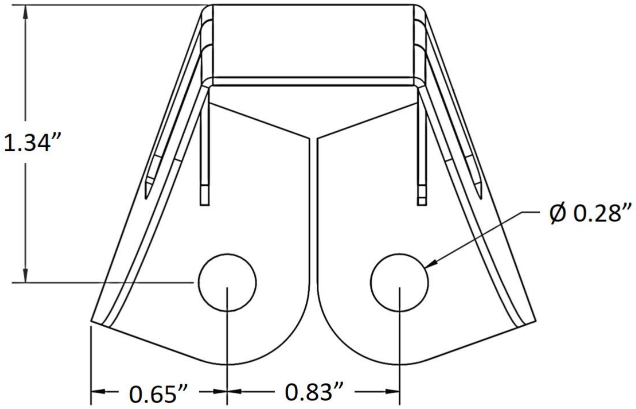
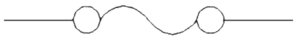
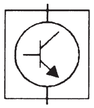
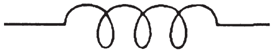
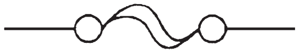
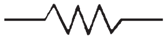
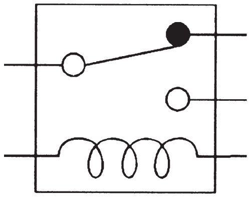
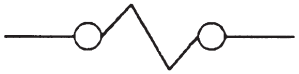
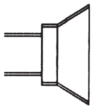
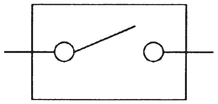
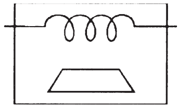
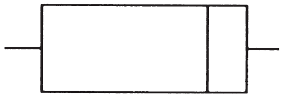
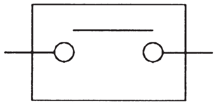
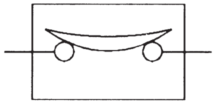
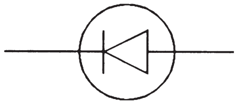
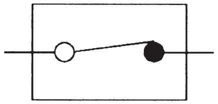
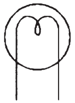
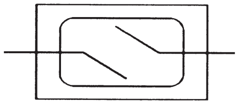
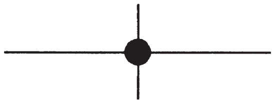
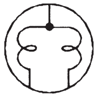
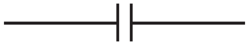
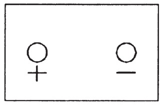
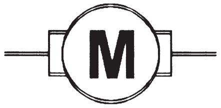
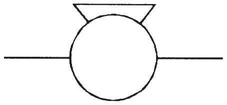
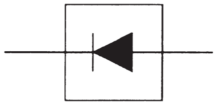
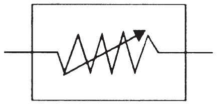
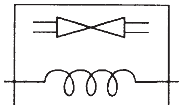


Figure 68
Camera Mounting Hole Pattern

The Alpine HCE-C1100 camera should be mounted within the shaded area shown in Figure 6 to ensure proper rear visibility. In addition to the two mounting holes shown in Figure 7, a third hole is needed for the camera harness. This camera harness hole should be protected with a rubber grommet to prevent damage to the wiring that will pass through it. The rubber grommet and fasteners will not be included with the camera installation kit.

2026 Chevrolet Low Cab Forward

Diesel Electrical Symbols

	Fuse		Electronic Parts		Coil (Inductor), Solenoid Magnetic Valve
	Fusible Link		Resistor		Relay
	Fusible Link Wire		Speaker		
	Switch		Buzzer		Connector
	Switch		Circuit Breaker		Light-Emitting Diode
	Switch (Normal Close Type)		Bulb		Reed Switch
	Contact Wiring		Double-Filament Bulb		Condenser
	Battery		Motor		Horn
	Diode		Variable Resistor Rheostat		Vacuum Switching Valve

Abbreviations

Abbreviation	Definition	Abbreviation	Definition
3A/T	6-Speed Automatic Transmission	IG	Ignition
4A/T	4-Speed Automatic Transmission	kW	kilowatt
A/T	Automatic Transmission	LH	Left hand
ABS	Anti-lock brake system	LO	Low
APP	Accelerator pedal position	LWB	Long wheelbase
ATF	Automatic Transmission Fluid	M/T	Manual Transmission
AUTO	Automatic	M/V	Magnetic valve
BRKT	Bracket	MAF	Mass airflow
C/B	Circuit breaker	MIL	Check engine light
CKP	Crankshaft position	OD	Over drive
CMP	Camshaft position	OPT	Option
COMB	Combination	PTO	Power Take Off
CONT	Control	RH	Right hand
D.R.L.	Day time running light	RR	Rear
DC	Direct current	SCV	Suction control valve
ECM	Electronic control module	ST	Start
ECT	Engine coolant temperature	STD	Standard
ECU	Electronic control unit	SW	Switch
EGR	Exhaust gas reticulation	SWB	Short wheelbase
EHCU	Electronic and hydraulic control unit	TCM	Transmission control module
FL	Fusible link	V	Volt
FRT	Front	VSV	Vacuum switching valve
FT	Fuel Temperature	W	Watt (S)
H/L	Headlight	W/	With
HI	High	W/O	Without
IAT	Intake air temperature	W/S	Weld splice
IC	Integrated circuit	WOT	Wide-open throttle

Additional information including complete chassis wiring schematics, connector locations, wire sizes, and pin connector diagrams can be obtained from our BBM

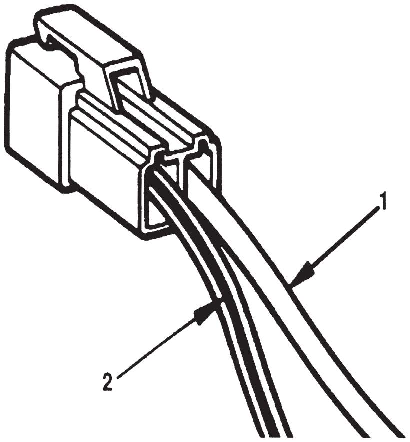
Wiring

Wire Color

All wires have color-coded insulation. Wires belonging to a system's main harness will have a single color. Wires belonging to a system's sub-circuits will have a colored stripe. Striped wires use the following code to show wire size and colors.

Example: 0.5 GRN / R

R — (Stripe Color)
GRN — (Base Color)
0.5 — Wire Size



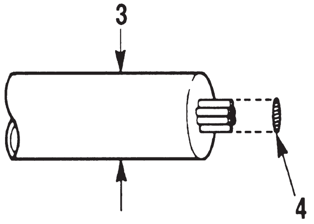
1. Single Color Wire
2. Colored Stripe Wire

Wiring (continued)

Nominal Size	Cross Sectional Area (mm²)	Outside Diameter (mm)	Allowable Current (A)	AWG Size (Cross reference)
0.3	0.372	1.8	9	22
0.5	0.563	2.0	12	20
0.85	0.885	2.2	16	18
1.25	1.287	2.5	21	16
2	2.091	2.9	28	14
3	3.296	3.6	37.5	12
5	5.227	4.4	53	10
8	7.952	5.5	67	8
15	13.36	7.0	75	6
20	20.61	8.2	97	4

Wire Size

The size of wire used in a circuit is determined by the amount of current (amperage), the length of the circuit, and the voltage drop allowed. The following wire size and load capacity are specified by AWG (American Wire Gauge). (Nominal size means approximate cross sectional area.)



3. Outside Diameter
4. Cross Sectional Area

Alternator and Battery Information

4500 HD, 4500 XD, and 5500 Diesel Engine
2.662:1 alternator pulley to crankshaft pulley

Electrical Caution: Please see note in Section 1 Introduction on page 1.9 of on the subject of “NO-START CONDITION – CLICKING OR BANGING FROM STARTER 2012-2015MY Equipped with 5.2L (4HK1) Diesel Engines”.

Fuses

Replacing Fuses

1. Before replacing fuses, apply the parking brake, then move the selector lever to the "P" (Park) position, and turn the engine control switch to the "LOCK" position.
2. Place the fuse puller on the fuse and pull it out. (The fuse puller is stored in the fuse box inside the cab.)
3. If the fuse appears as shown in the right hand side of the diagram at left, the fuse is blown. Replace with a spare fuse. (Spare fuses are stored in the fuse box inside the cab.)

Replacing Relays

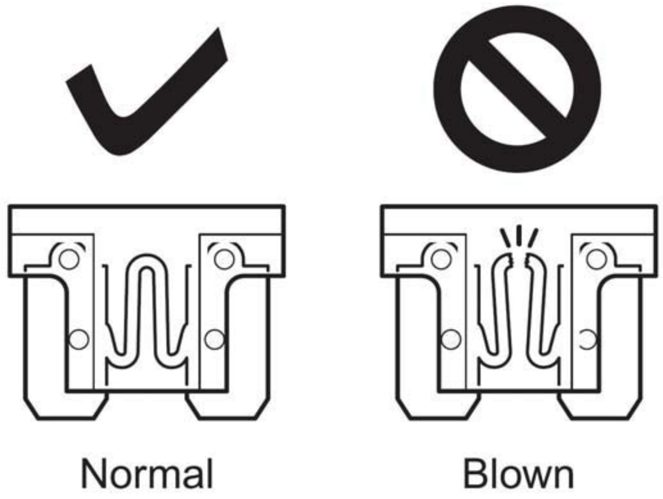
1. Before replacing the relays, contact the nearest Isuzu Dealer.

Fusible Links

1. The fusible link is primarily used to protect circuits where high amounts of current flow and where it would not be practical to use a fuse. For example, the starter circuit. When a current overload occurs, the fusible link melts open and interrupts the flow of current so as to prevent the rest of the wiring harness from burning.
2. Determine the cause of the overload before replacing the fusible link. The replacement fusible link must have the same amperage specification as the original fusible link.
3. Never replace a blown fusible link with fusible link of a different amperage specification. Doing so can result in an electrical fire or other serious circuit damage.

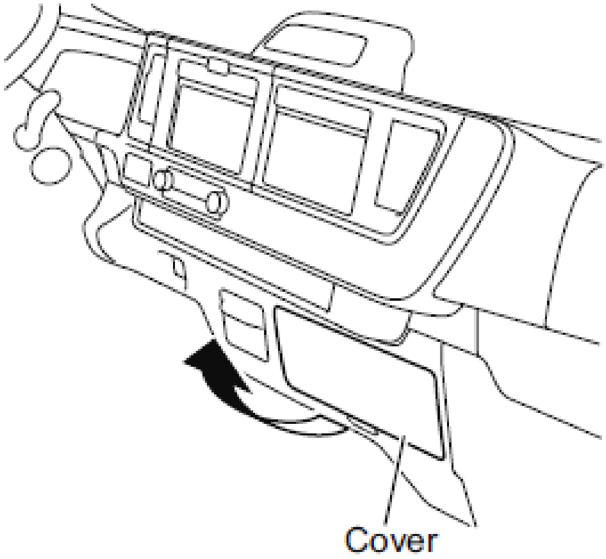
⚠ CAUTION

- Always use fuses specified by Isuzu. Using fuses with a rating other than that specified, or using wire or tin foil, etc., could result in fire or damage.
- If the new fuses blow right away and the cause is unknown, contact the nearest Isuzu Dealer.
- Do not inspect or replace fuses when the engine control switch is in the "ON" position. Doing so may lead to an accident.
- When inspecting fuses, be sure to park the vehicle on flat, level ground and apply chocks to the wheels.

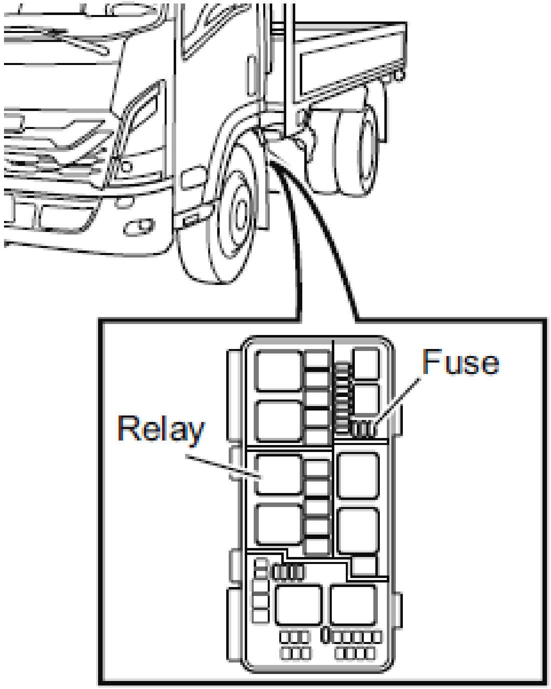


Fuse and Relay Box Locations

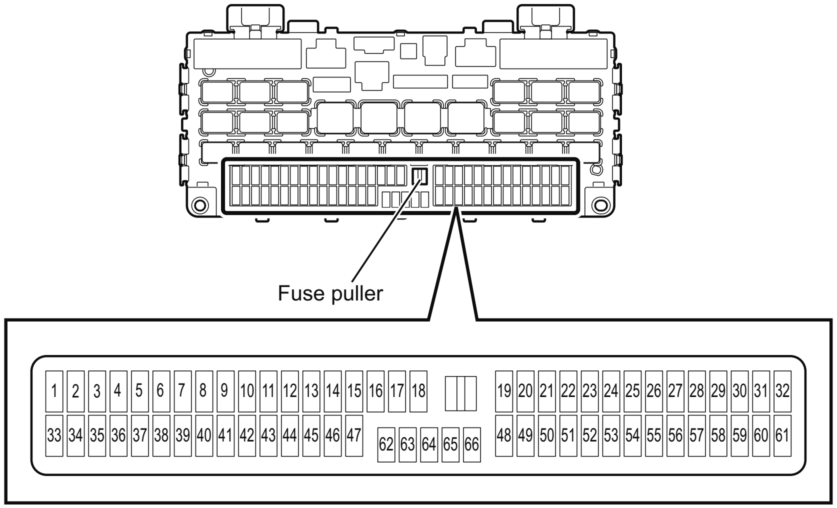
Interior



Exterior

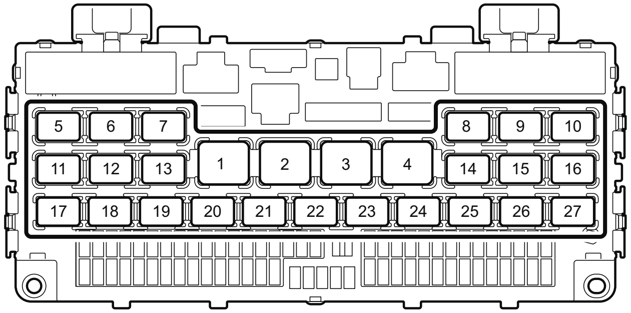


Fuse Location (interior)


Fuse puller
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 62 63 64 65 66 48 49 50 51 52 53 54 55 56 57 58 59 60 61

No.	Description	Rating
1	HEAD LIGHT HI(RH)	10A
2	AUDIO REVERSE MUTE	10A
3	HEAD LIGHT HI(LH)	10A
4	HEAD LIGHT LO(RH)	10A
5	HEAD LIGHT LO(LH)	10A
6	SRS	5A
7	CONTROLLER(ACC)	15A
8	—	5A
9	TRAILER BRAKE	25A
10	—	10A
11	ACC.SOCKET, AUDIO, USB	15A
12	—	10A
13	—	10A
14	METER(IGN)	5A
15	TRANSMISSION(IGN)	10A
16	POWER SOURCE(ACC)	20A
17	CENTRAL GATEWAY(IGN)	5A
18	—	15A
19	BLOWER	25A
20	TURN, HAZARD	15A
21	—	10A
22	MIRROR HEATER	15A
23	WIPER	25A
24	TRANSMISSION(BATT)	10A
25	BACK UP LIGHTS	10A
26	AIR CONDITIONER(BATT)	15A
27	—	10A
28	BODY CONTROL(BATT)	10A
29	ELECTRIC PARKING BRAKE(IGN)	10A
30	ABS,STEREO CAMERA(IGN)	5A
31	I/O CONTROLLER(BATT)	15A
32	FOG LIGHTS	10A
33	DRL	10A
34	BRAKE LIGHTS	10A
35	TRAILER BRAKE	15A
36	BRAKE LIGHTS SWITCH	10A
37	ILLUMINATIONS	10A
38	TAIL LIGHTS	10A
39	KEYLESS ENTRY(IGN)	5A
40	AUDIO(BATT)	10A
41	I/O CONTROLLER(IGN)	10A
42	MARKER LIGHTS	10A
43	—	10A
44	ENGINE CONTROL SWITCH	10A
45	POWER TAKE OFF,HSA	10A
46	CONTROLLER(IGN)	10A
47	MOBILEYE	10A
48	AIR CONDITIONER(IGN)	10A
49	HEAD LIGHTS WASHER	25A
50	BODY CONTROL(IGN)	10A
51	HORN	15A
52	—	5A
53	CONTROLLER(BATT)	15A
54	METER(BATT)	10A
55	KEYLESS ENTRY(BATT)	10A
56	—	10A
57	—	10A
58	STARTER	10A
59	CORNERING LIGHTS	5A
60	CENTRAL GATEWAY(BATT)	5A
61	STEREO CAMERA(BATT）	10A
62	SPARE	—
63	SPARE	—
64	SPARE	—
65	SPARE	—
66	SPARE	—

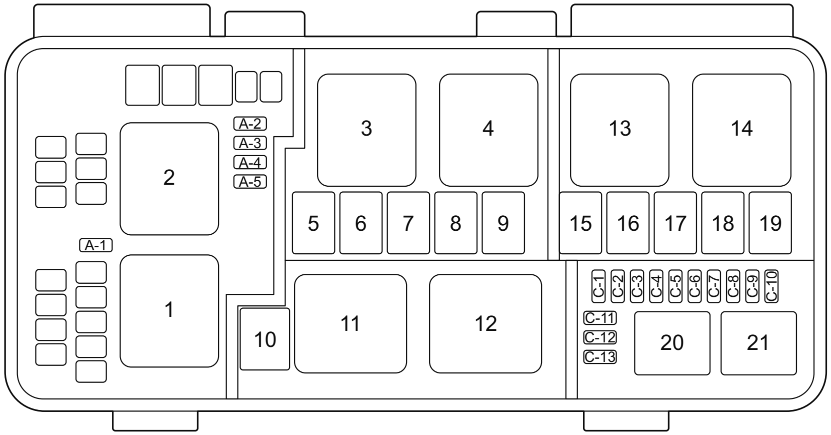
Relay Location (interior)


5
6
7
8
9
10
11
12
13
1
2
3
4
14
15
16
17
18
19
20
21
22
23
24
25
26
27

No.	Description
1	Accessory
2	Ignition main
3	Blower motor
4	Wiper key on
5	—
6	Clearance lights cut
7	Power window (rear) (crew cab model)
8	—
9	—
10	—
11	DRL
12	—
13	—
14	Tail lights

No.	Description
15	—
16	Headlights high
17	DRL
18	Headlights low
19	Trailer brake (model with trailer)
20	Power window
21	Headlights washer
22	Back up lights
23	Washer motor
24	Horn
25	—
26	—
27	Fog lights (model with fog lights)

Relay and Fuse Locations (exterior)

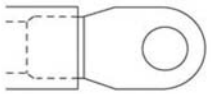

A-2
A-3
A-4
A-5
3
4
13
14
2
5
6
7
8
9
15
16
17
18
19
A-1
C-1
C-2
C-3
C-4
C-5
C-6
C-7
C-8
C-9
C-10
1
C-11
C-12
C-13
11
12
10
20
21

No.	Relay name
1	Starter
2	—
3	—
4	—
5	—
6	—
7	Fuel heater
8	—
9	—
10	Rear dome light
11	—
12	NOx & Urea
13	ECM main
14	Ignition chassis
15	Marker lights
16	—
17	Heater valve
18	—
19	Condenser fan
20	A/C compressor
21	Starter cut

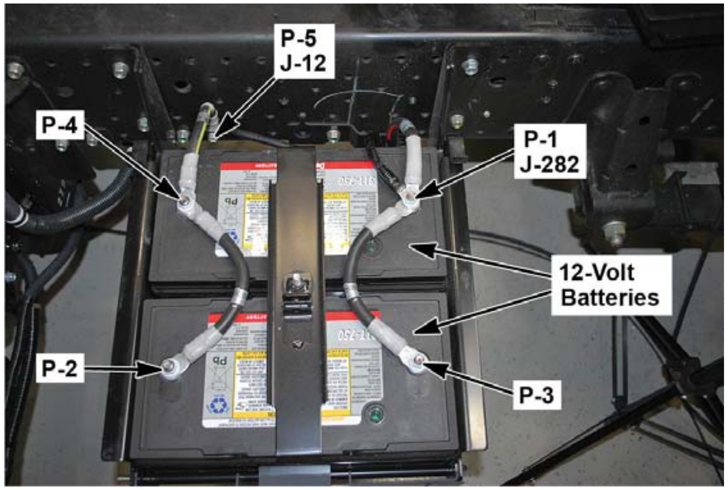
No.	Fuse name	Rating
A-1	Air conditioner	20A
A-2	ECM (battery)	10A
A-3	—	—
A-4	—	—
A-5	—	—
C-1	SCR	20A
C-2	Power source	15A
C-3	Marker lights	20A
C-4	Chassis ignition	15A
C-5	SCR ignition	10A
C-6	ECM ignition	15A
C-7	ECM main	20A
C-8	PM sensor	15A
C-9	PTO	10A
C-10	—	—
C-11	Chassis (battery)	10A
C-12	—	—
C-13	—	—

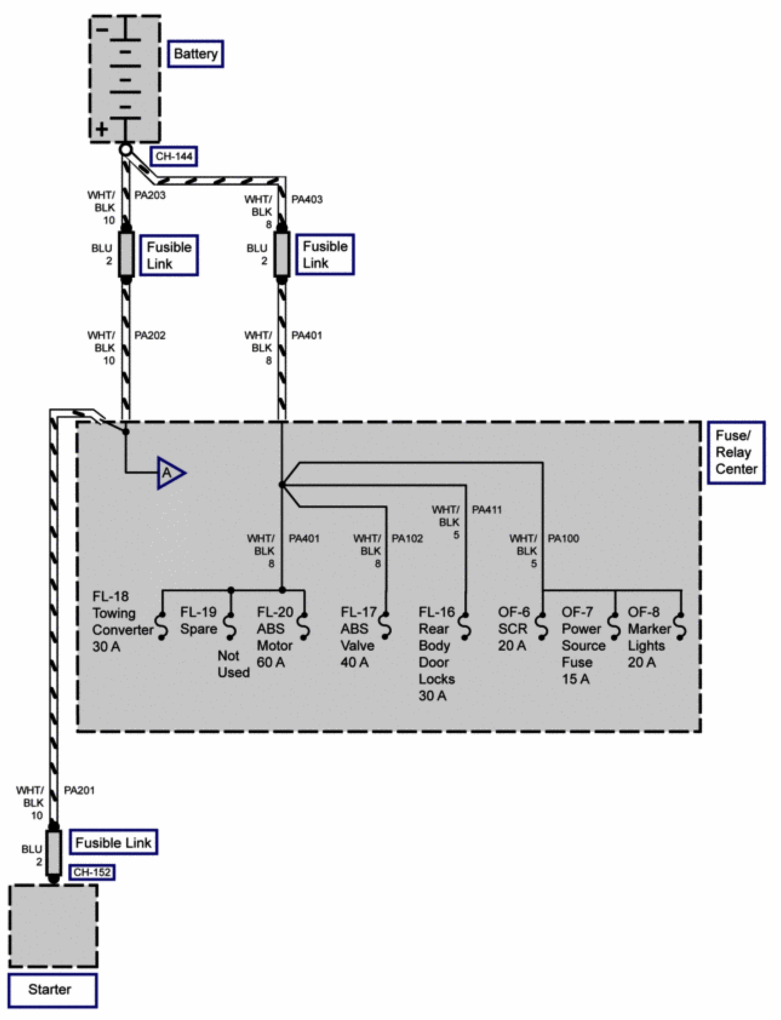
Battery Cable Tightening Torques

P-1, P-2, P-3, P-4 Battery Terminals Connector End View



Connector Part Information	• 1 Way Eyelet		
Pin	**Wire Color**	**Circuit Number**	**Function**
P-1	BLK BLK/RED	—	Battery Positive To Positive Battery Battery To Starter Positive
P-2	BLK	—	Battery Negative To Battery Negative
P-3	BLK	—	Battery Positive To Battery Positive
P-4	BLK BLK/YEL	—	Battery Negative To Battery Negative Battery To Ground P-5

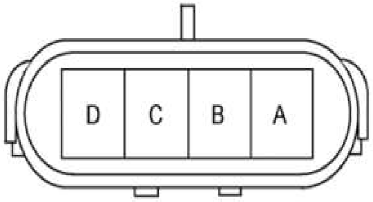

P-5
J-12
P-4
P-1
J-282
12-Volt
Batteries
P-2
P-3


Battery
CH-144
WHT/
BLK
10
PA203
WHT/
BLK
8
PA403
BLU
2
Fusible
Link
BLU
2
Fusible
Link
WHT/
BLK
10
PA202
WHT/
BLK
8
PA401
Fuse/
Relay
Center
A
WHT/
BLK
5
PA411
WHT/
BLK
8
PA401
WHT/
BLK
8
PA102
WHT/
BLK
5
PA100
FL-18
Towing
Converter
30 A
FL-19
Spare
Not
Used
FL-20
ABS
Motor
60 A
FL-17
ABS
Valve
40 A
FL-16
Rear
Body
Door
Locks
30 A
OF-6
SCR
20 A
OF-7
Power
Source
Fuse
15 A
OF-8
Marker
Lights
20 A
WHT/
BLK
10
PA201
BLU
2
Fusible Link
CH-152
Starter

Tightening Torques: 15 N-m (11 lb-ft)

Rear Manufacturer Connector Location and Diagram

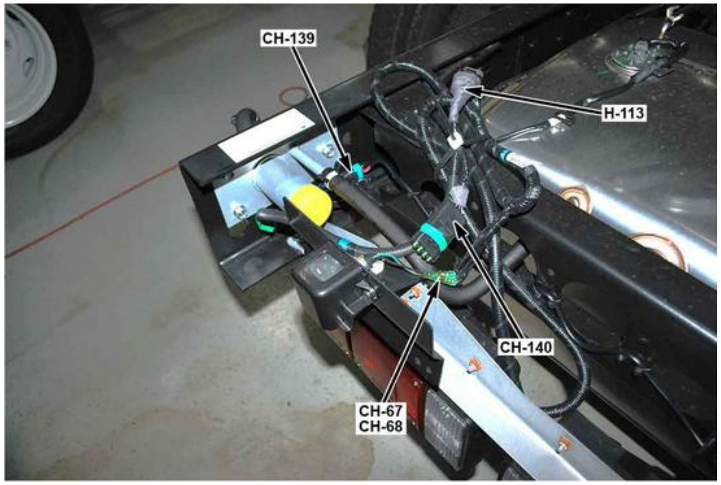
CH-140 MANUFUCTURE_CONN_RR (REAR MANUFACTURE CONNECTOR)

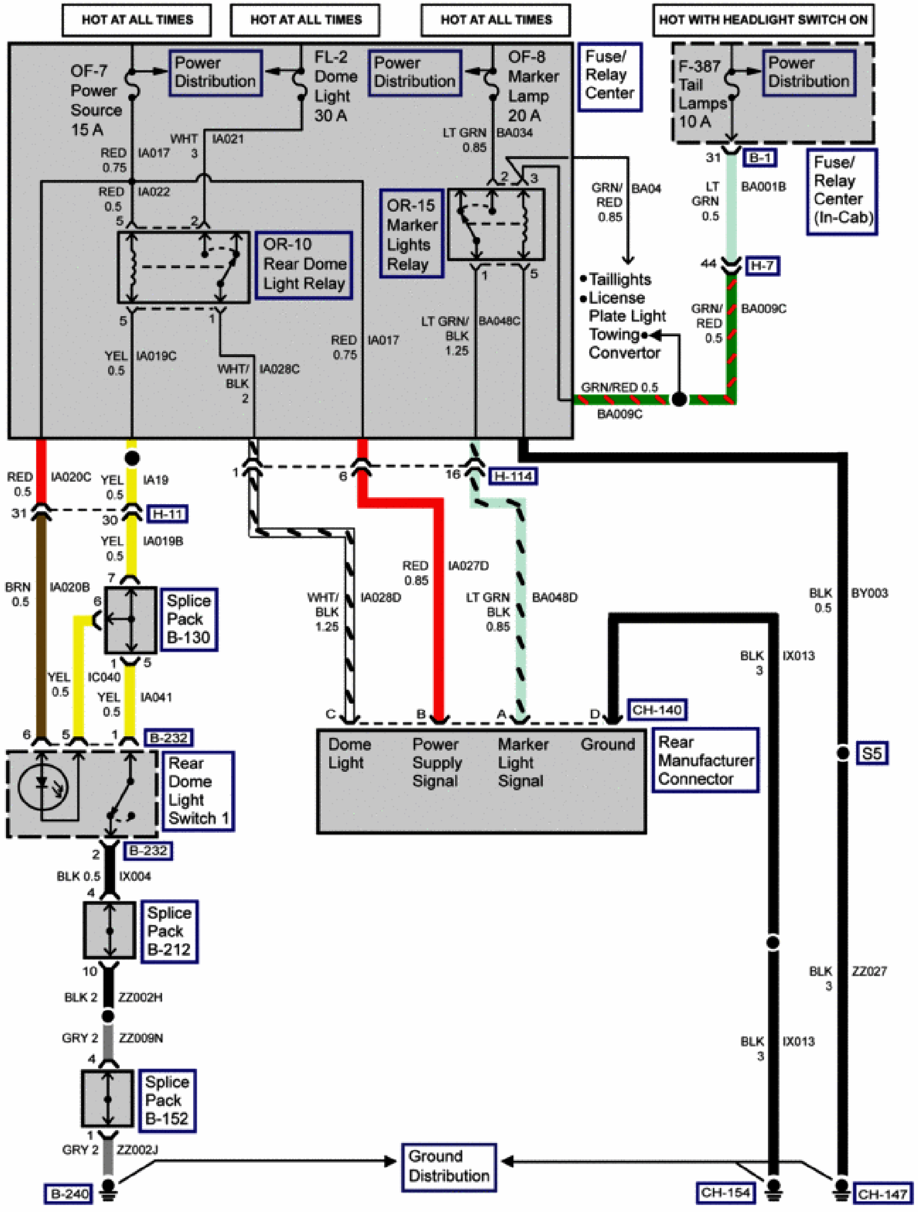


Connector Part Information	- DELPHI 12010974 - 4-WAY M (BLK)

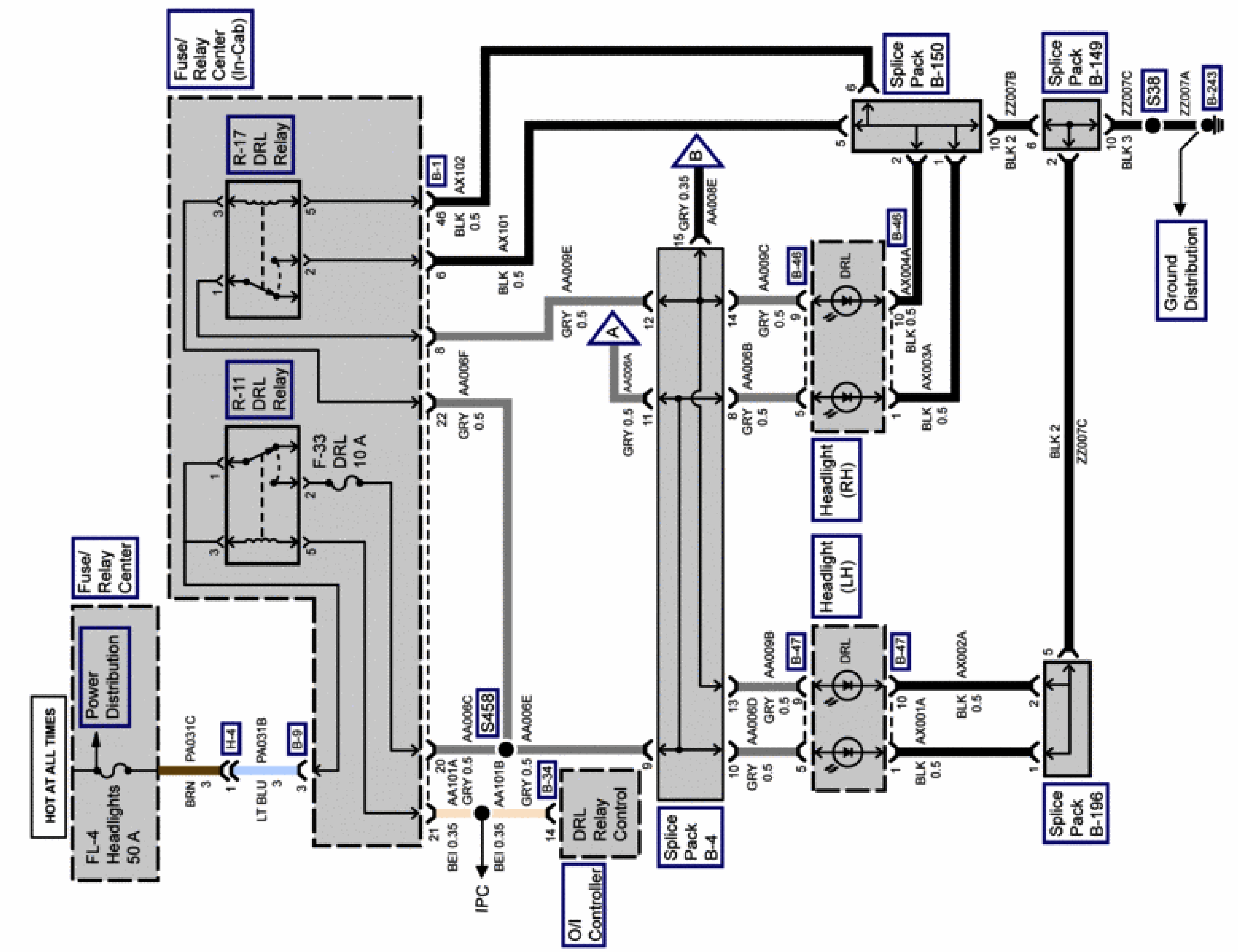
Pin	Wire Color	Circuit Number	Function
1	LT-GRN/BLK	BA048D	MARKER LIGHTS SIGNAL
2	RED	IA027D	FUSE OF-7 POWER SUPPLY
3	WHT/BLK	IA028D	REAR DOME LIGHT FUSE FL-2 POWER SUPPLY
4	BLK	IX013	GROUND CH-154

Left Rear Corner of the Frame

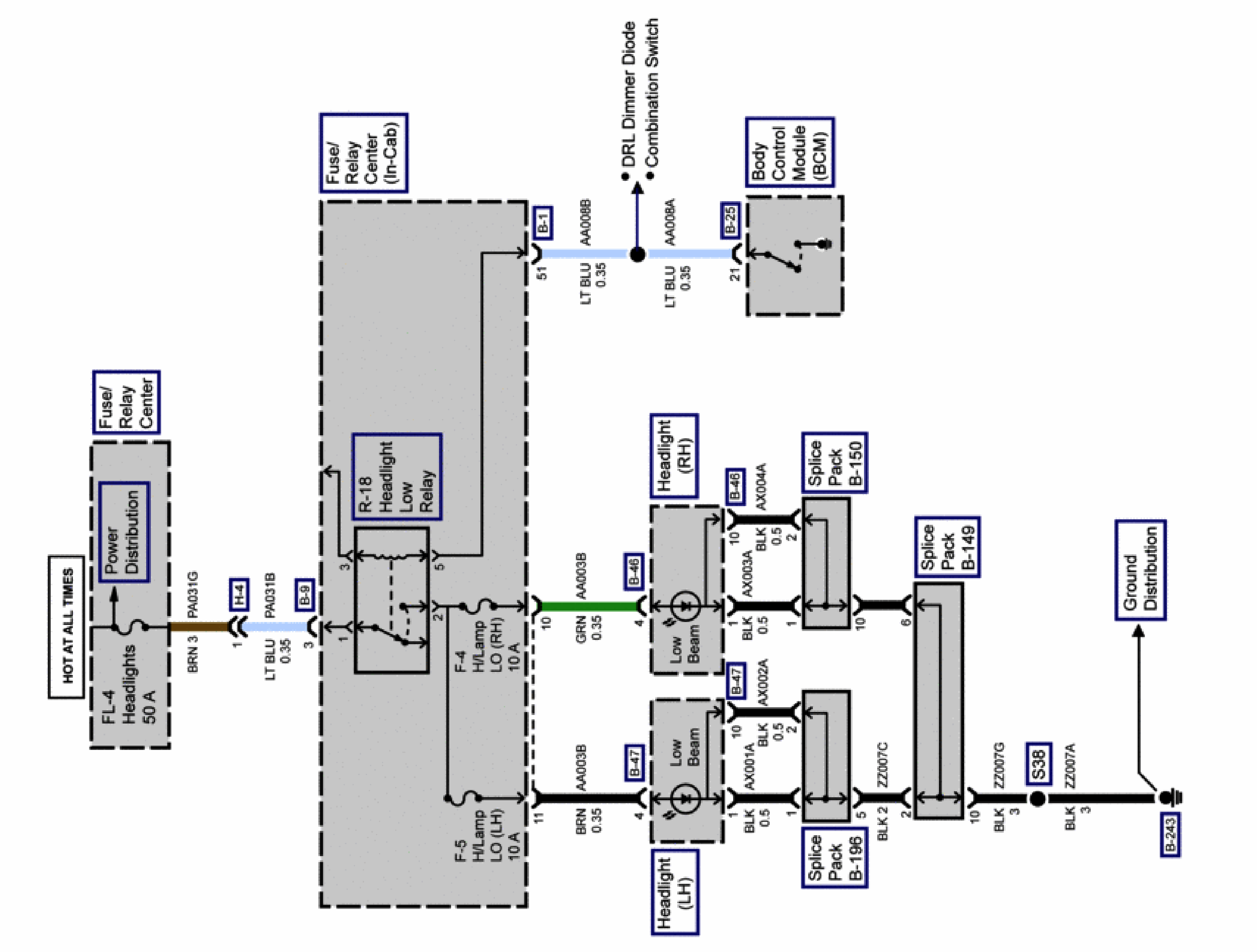

CH-139
H-113
CH-140
CH-67
CH-68


HOT AT ALL TIMES
HOT AT ALL TIMES
HOT AT ALL TIMES
HOT WITH HEADLIGHT SWITCH ON
OF-7 Power Source 15 A
Power Distribution
FL-2 Dome Light 30 A
Power Distribution
OF-8 Marker Lamp 20 A
Fuse/ Relay Center
F-387 Tail Lamps 10 A
Power Distribution
RED 0.75
IA017
WHT 3
IA021
LT GRN 0.85
BA034
RED 0.5
IA022
5
2
OR-10 Rear Dome Light Relay
OR-15 Marker Lights Relay
2
3
1
5
5
1
YEL 0.5
IA019C
WHT/ BLK 2
IA028C
RED 0.75
IA017
LT GRN/ BLK 1.25
BA048C
GRN/ RED 0.85
BA04
• Taillights
• License Plate Light
Towing Convertor
GRN/RED 0.5
BA009C
31
B-1
LT GRN 0.5
BA001B
Fuse/ Relay Center (In-Cab)
44
H-7
GRN/ RED 0.5
BA009C
RED 0.5
IA020C
YEL 0.5
IA19
31
30
H-11
1
6
16
H-114
YEL 0.5
IA019B
BRN 0.5
IA020B
7
6
Splice Pack B-130
1
5
YEL 0.5
IC040
YEL 0.5
IA041
6
5
1
B-232
Rear Dome Light Switch 1
2
B-232
BLK 0.5
IX004
4
Splice Pack B-212
10
BLK 2
ZZ002H
GRY 2
ZZ009N
4
Splice Pack B-152
1
GRY 2
ZZ002J
B-240
WHT/ BLK 1.25
IA028D
RED 0.85
IA027D
LT GRN BLK 0.85
BA048D
C
B
A
D
CH-140
Dome Light
Power Supply Signal
Marker Light Signal
Ground
Rear Manufacturer Connector
Ground Distribution
BLK 0.5
BY003
BLK 3
IX013
S5
BLK 3
ZZ027
BLK 3
IX013
CH-154
CH-147

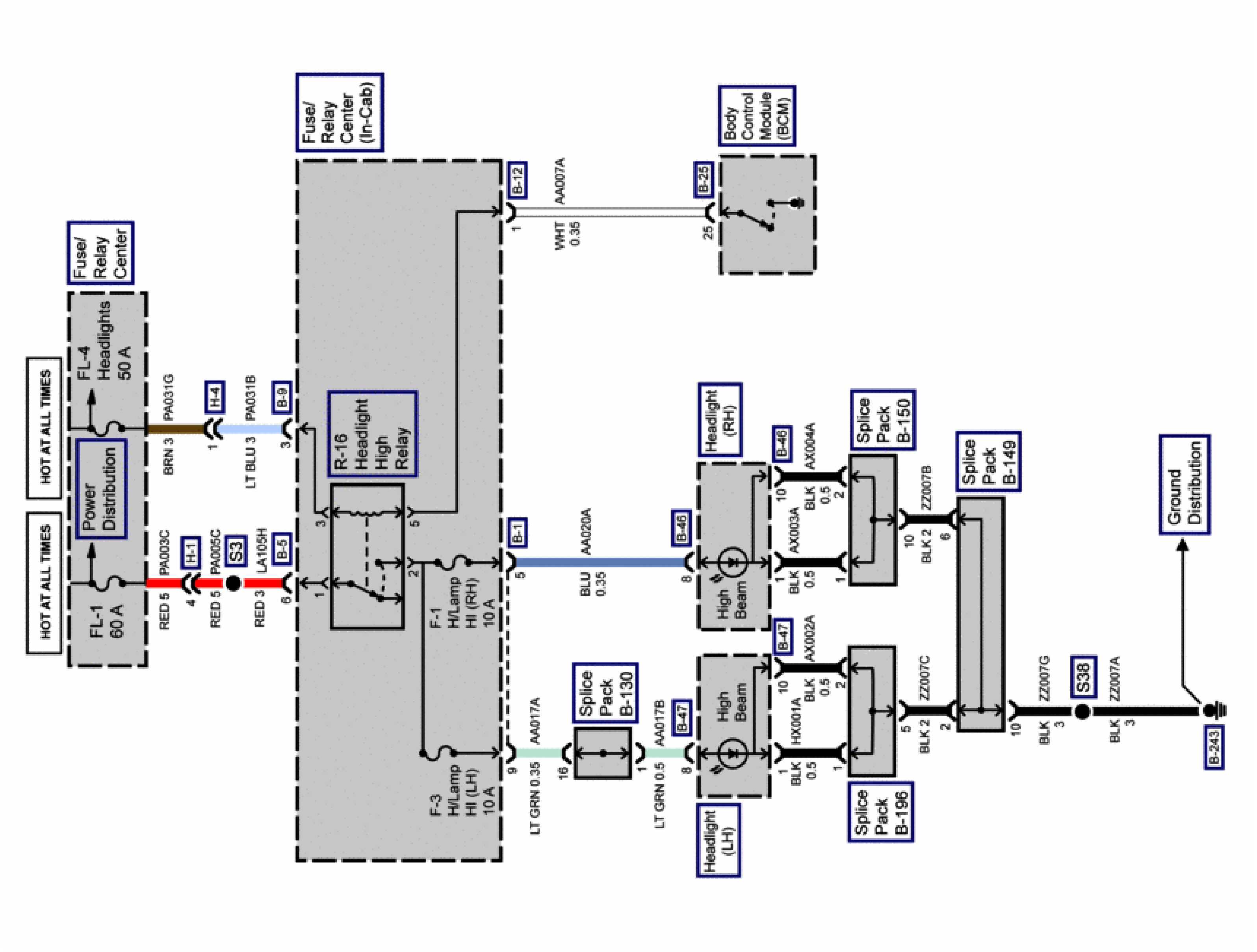
Headlights


Fuse/ Relay Center (In-Cab)
R-17 DRL Relay
R-11 DRL Relay
F-33 DRL 10 A
Fuse/ Relay Center
Power Distribution
HOT AT ALL TIMES
FL-4 Headlights 50 A
PA031C
BRN 3
H-4
1
PA031B
LT BLU 3
B-9
3
B-1
AX102
46 BLK 0.5
AX101
6 BLK 0.5
AA009E
8 GRY 0.5
A
AA008A
GRY 0.5 11
AA008F
22 GRY 0.5
AA009C
S458
AA008E
20 AA101A GRY 0.5
AA101B GRY 0.5
B-34
21 BEI 0.35
BEI 0.35
14
IPC
DRL Relay Control
O/I Controller
9
B
15 GRY 0.35 AA008E
12
Splice Pack B-4
AA009C
14 GRY 0.5
B-46
9
DRL
AA006B
8 GRY 0.5
5
Headlight (RH)
B-46
AX004A
10 BLK 0.5
AX003A
1 BLK 0.5
Headlight (LH)
AA009B
13
B-47
GRY 0.5 9
AA006D
10 GRY 0.5
5
B-47
AX002A
10
AX001A
1 BLK 0.5
BLK 0.5
2
1
5
Splice Pack B-196
Splice Pack B-150
6
5
2
1
ZZ007B
10 BLK 2
6
Splice Pack B-149
2
BLK 2 ZZ007C
ZZ007C
10 BLK 3
S38
ZZ007A
B-243
Ground Distribution

Headlights Low Beam

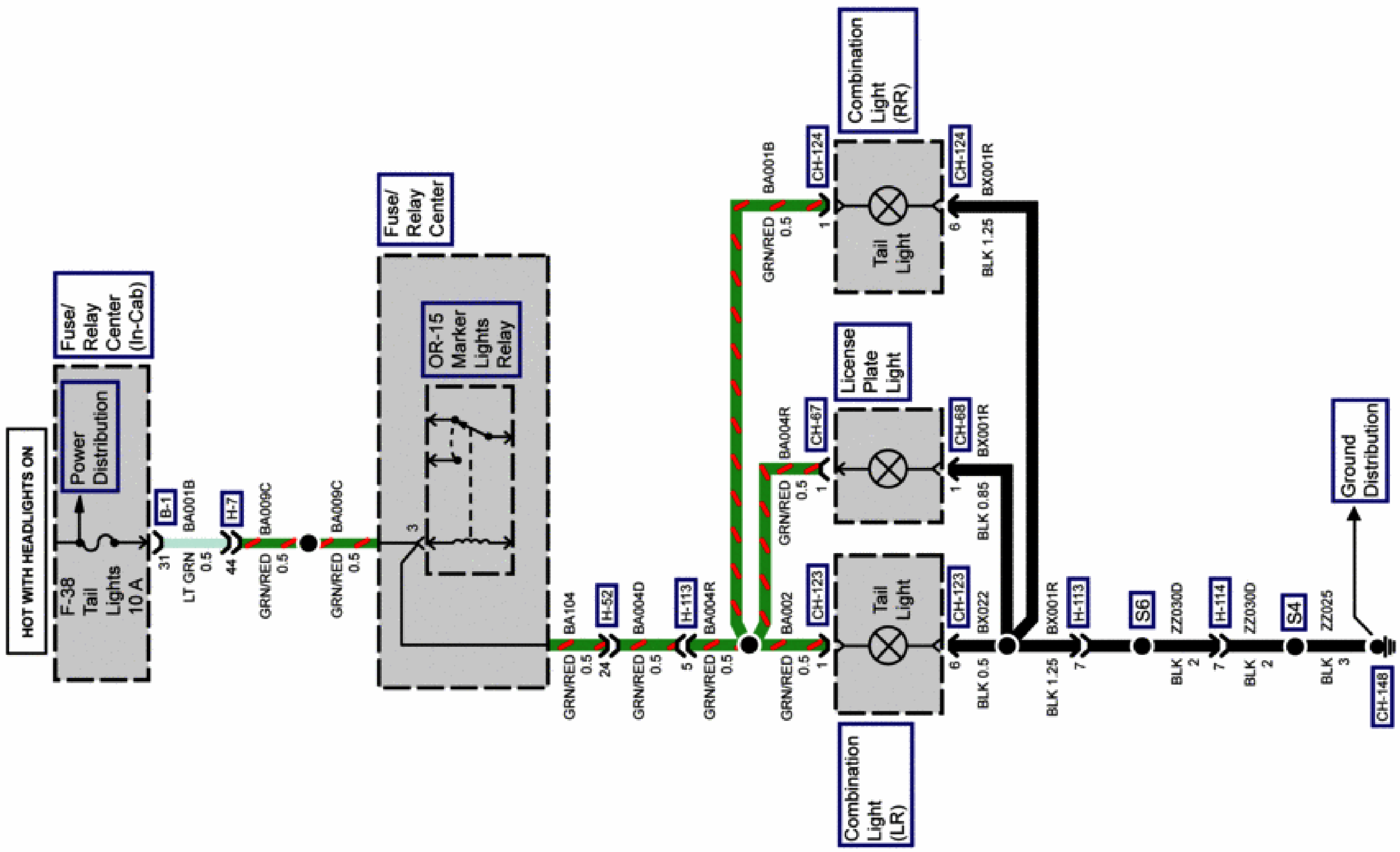

HOT AT ALL TIMES
Fuse/ Relay Center
Power Distribution
FL-4 Headlights 50 A
PA031G
BRN 3
H-4
1
PA031B
LT BLU 0.35
B-9
3
Fuse/ Relay Center (In-Cab)
R-18 Headlight Low Relay
3
5
1
2
F-4 H/Lamp LO (RH) 10 A
F-5 H/Lamp LO (LH) 10 A
B-1
51
AA008B
LT BLU 0.35
DRL Dimmer Diode
Combination Switch
AA008A
LT BLU 0.35
B-25
21
Body Control Module (BCM)
10
AA003B
GRN 0.35
B-46
4
11
AA003B
BRN 0.35
B-47
4
Headlight (RH)
Low Beam
Headlight (LH)
Low Beam
B-46
10
AX004A
BLK 0.5
2
1
AX003A
BLK 0.5
1
B-47
10
AX002A
BLK 0.5
2
1
AX001A
BLK 0.5
1
Splice Pack B-150
Splice Pack B-196
10
6
5
ZZ007C
BLK 2
2
Splice Pack B-149
10
ZZ007G
BLK 3
S38
ZZ007A
BLK 3
B-243
Ground Distribution

Headlights High Beam


HOT AT ALL TIMES
HOT AT ALL TIMES
Fuse/ Relay Center
FL-4 Headlights 50 A
Power Distribution
FL-1 60 A
PA031G
BRN 3
H-4
1
PA031B
LT BLU 3
B-9
3
PA003C
RED 5
H-1
4
PA005C
RED 5
S3
LA105H
RED 3
B-5
6
Fuse/ Relay Center (In-Cab)
R-16 Headlight High Relay
3
5
1
2
F-1 H/Lamp HI (RH) 10 A
F-3 H/Lamp HI (LH) 10 A
B-12
1
AA007A
WHT 0.35
B-25
25
Body Control Module (BCM)
B-1
5
AA020A
BLU 0.35
B-46
8
Headlight (RH)
High Beam
B-46
10
AX004A
BLK 0.5
2
AX003A
BLK 0.5
1
Splice Pack B-150
ZZ007B
10
BLK 2
6
Splice Pack B-149
9
LT GRN 0.35
AA017A
16
Splice Pack B-130
1
LT GRN 0.5
AA017B
B-47
8
High Beam
Headlight (LH)
B-47
10
AX002A
BLK 0.5
2
HX001A
BLK 0.5
1
Splice Pack B-196
ZZ007C
5
BLK 2
2
10
ZZ007G
BLK 3
S38
ZZ007A
BLK 3
B-243
Ground Distribution

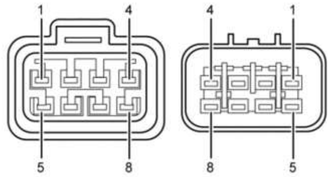
2026 Chevrolet Low Cab Forward

Tail Lights


HOT WITH HEADLIGHTS ON
Fuse/ Relay Center (In-Cab)
Power Distribution
F-38 Tail Lights 10 A
B-1
31
BA001B
LT GRN 0.5
H-7
44
BA009C
GRN/RED 0.5
BA009C
GRN/RED 0.5
Fuse/ Relay Center
OR-15 Marker Lights Relay
3
BA104
GRN/RED 0.5
H-52
24
BA004D
GRN/RED 0.5
H-113
5
BA004R
GRN/RED 0.5
BA001B
GRN/RED 0.5
CH-124
1
Combination Light (RR)
Tail Light
CH-124
6
BX001R
BLK 1.25
BA004R
GRN/RED 0.5
CH-67
1
License Plate Light
CH-68
1
BX001R
BLK 0.85
BA002
GRN/RED 0.5
CH-123
1
Tail Light
Combination Light (LR)
CH-123
6
BX022
BLK 0.5
BX001R
BLK 1.25
H-113
7
S6
ZZ030D
BLK 2
H-114
7
ZZ030D
BLK 2
S4
ZZ025
BLK 3
Ground Distribution
CH-148

Rear Combination Lights Connector

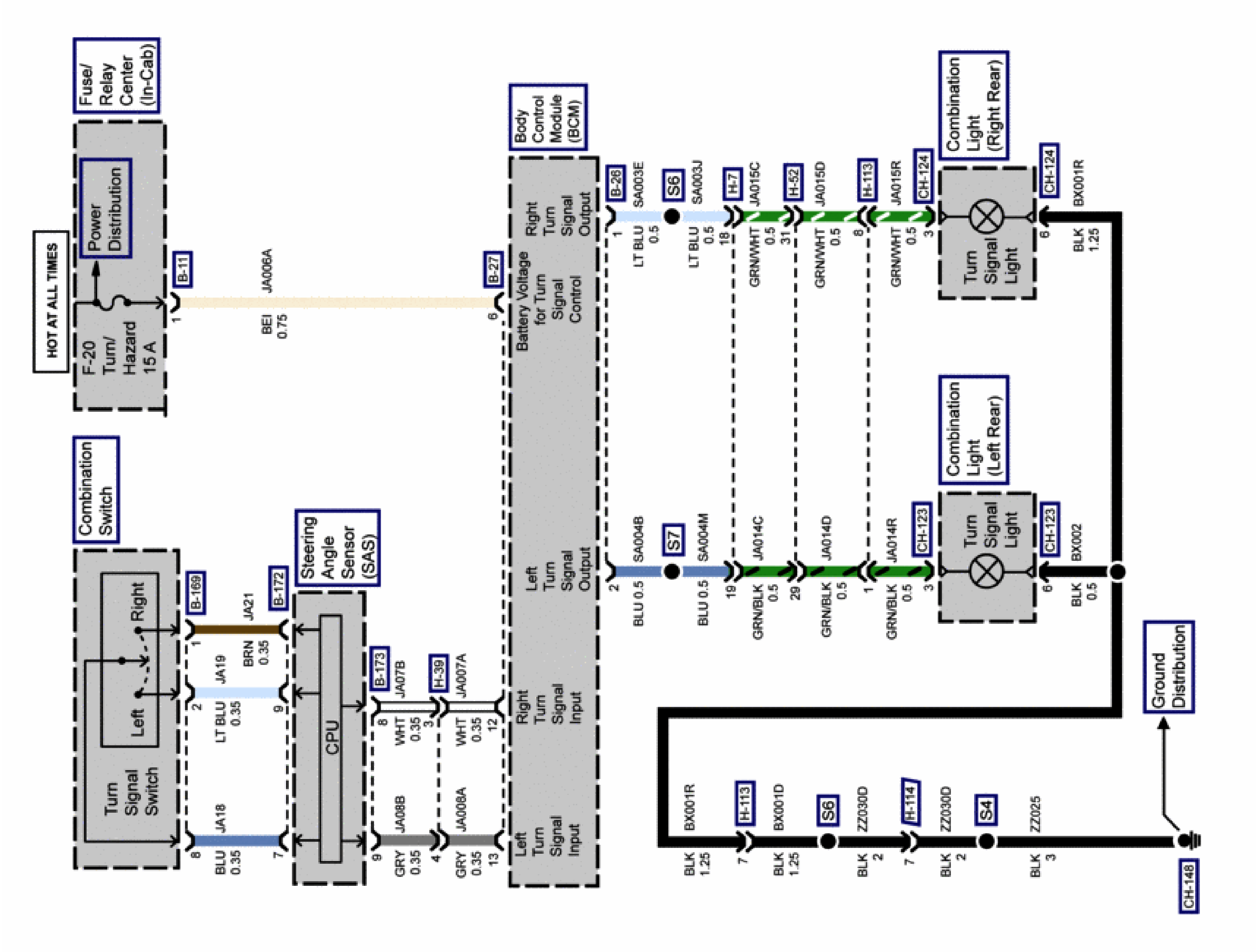
H-113 Rear Chassis Harness to Rear Lamps Harness



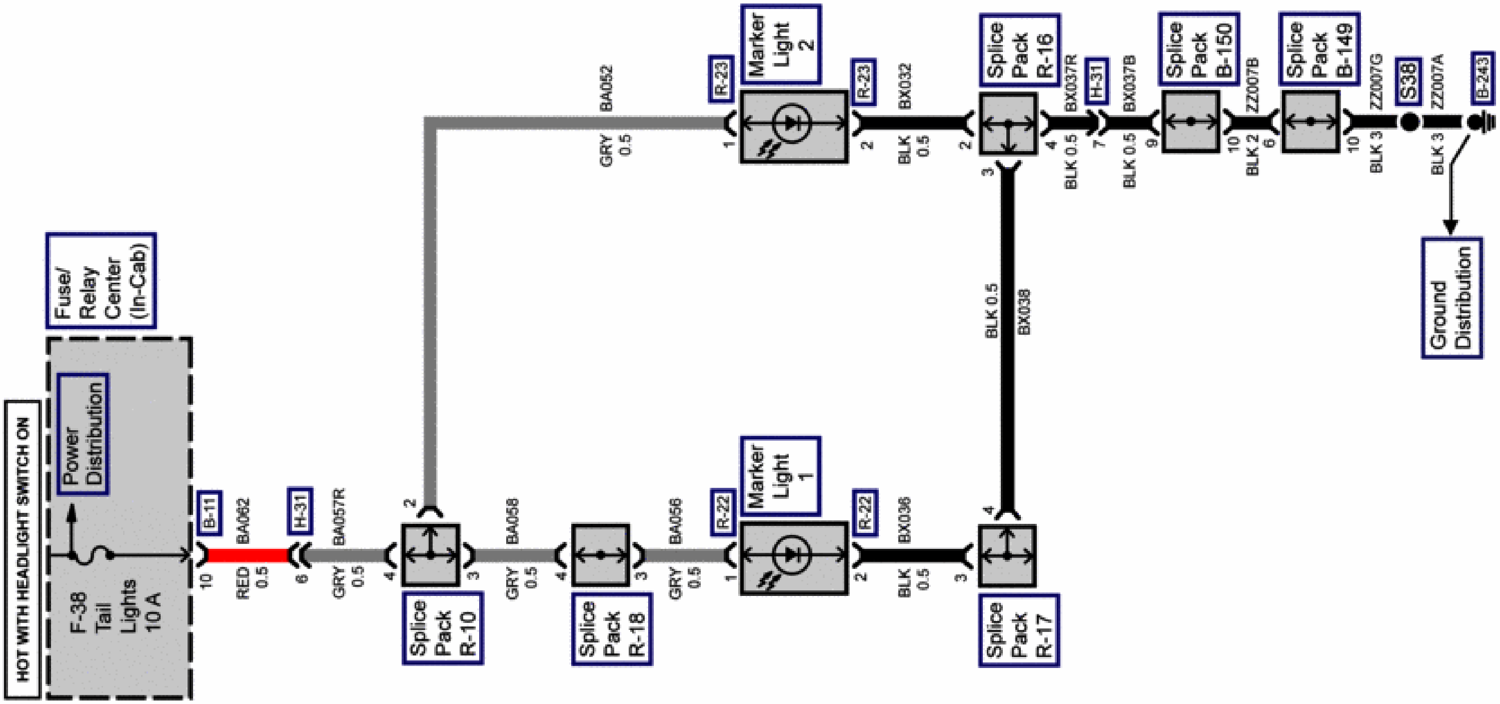
Connector Part Information		• **FURUKAWA X010369** • **8-WAY F (BLK)**		Connector Part Information		• **FURUKAWA X010371** • **8-WAY M (BLK)**	
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
1	GRN/BLK	JA014D	LEFT TRUN SIGNAL FROM H-52 PIN 29	1	GRN/BLK	JA014R	LEFT TRUN SIGNAL TO CH-123 PIN 3
2	GRN	CA002D	STOP LIGHT (RH) OUTPUT SIGNAL FROM H-52 PIN 30	2	GRN	CA002R	STOP LIGHT (RH) OUTPUT SIGNAL TO CH-124 PIN 2
3	BRN	CA001D	STOP LIGHT (LH) OUTPUT SIGNAL FROM H-52 PIN 28	3	BRN	CA001R	STOP LIGHT (LH) OUTPUT SIGNAL TO CH-123 PIN 2
4	-	-	NOT USED	4	-	-	NOT USED
5	GRN/RED	BA004D	FUSE F-38 POWER SUPPLY FROM H-52 PIN 24	5	GRN/RED	BA004R	FUSE F-38 POWER SUPPLY TO CH-67 PIN 1, CH-123 PIN 1, CH-124 PIN 1
6	RED/BLU	KA012D	FUSE F-25 POWER SUPPLY FROM H-52 PIN 33	6	RED/BLU	KA012R	FUSE F-25 POWER SUPPLY TO CH-123 PIN 5, CH-124 PINS 4, 5
7	BLK	BX001D	GROUND FROM S6	7	BLK	BX001R	GROUND TO CH-123 PIN 6, CH-124 PIN 6, CH-68 PIN 1
8	GRN/WHT	JA015D	RIGHT TRUN SIGNAL FROM H-52 PIN 31	8	GRN/WHT	JA015R	RIGHT TRUN SIGNAL TO CH-124 PIN 3

Left Rear Corner of the Frame

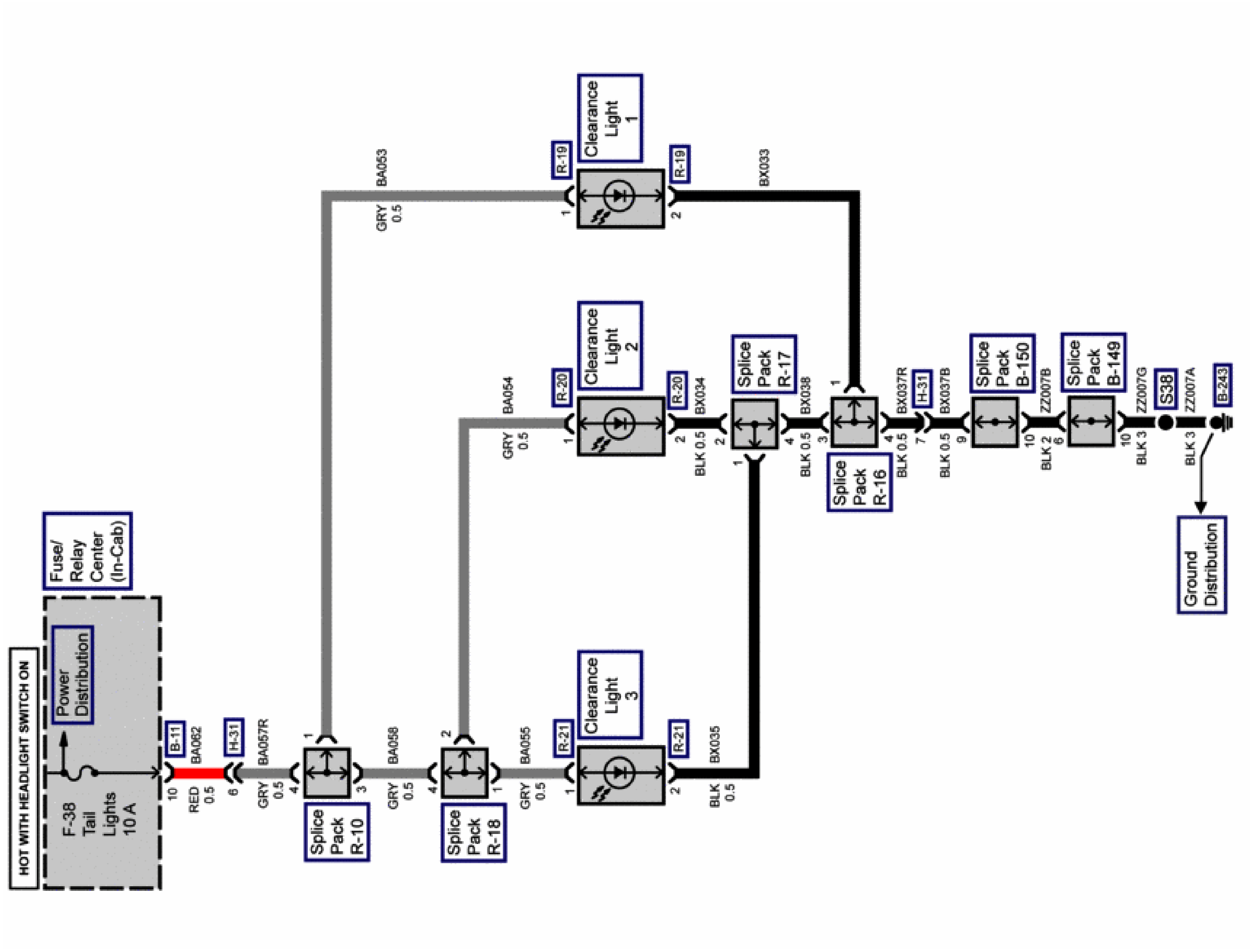
Rear Turn Signal Lights


HOT AT ALL TIMES
Fuse/ Relay Center (In-Cab)
Power Distribution
F-20 Turn/ Hazard 15 A
B-11
1
JA006A
BEI 0.75
B-27
6
Body Control Module (BCM)
Battery Voltage for Turn Signal Control
Right Turn Signal Output
Left Turn Signal Output
Right Turn Signal Input
Left Turn Signal Input
B-26
1
SA003E
LT BLU 0.5
S6
SA003J
LT BLU 0.5
H-7
18
JA015C
GRN/WHT 0.5
H-52
31
JA015D
GRN/WHT 0.5
H-113
8
JA015R
GRN/WHT 0.5
CH-124
3
Combination Light (Right Rear)
Turn Signal Light
CH-124
6
BX001R
BLK 1.25
2
SA004B
BLU 0.5
S7
SA004M
BLU 0.5
19
JA014C
GRN/BLK 0.5
29
JA014D
GRN/BLK 0.5
1
JA014R
GRN/BLK 0.5
CH-123
3
Combination Light (Left Rear)
Turn Signal Light
CH-123
6
BX002
BLK 0.5
Combination Switch
Turn Signal Switch
Right
Left
B-169
1
JA21
BRN 0.35
B-172
2
JA19
LT BLU 0.35
9
8
JA18
BLU 0.35
7
Steering Angle Sensor (SAS)
CPU
B-173
8
JA07B
WHT 0.35
H-39
3
JA007A
WHT 0.35
12
9
JA08B
GRY 0.35
4
JA008A
GRY 0.35
13
BX001R
BLK 1.25
H-113
7
BX001D
BLK 1.25
S6
ZZ030D
BLK 2
H-114
7
ZZ030D
BLK 2
S4
ZZ025
BLK 3
Ground Distribution
CH-148

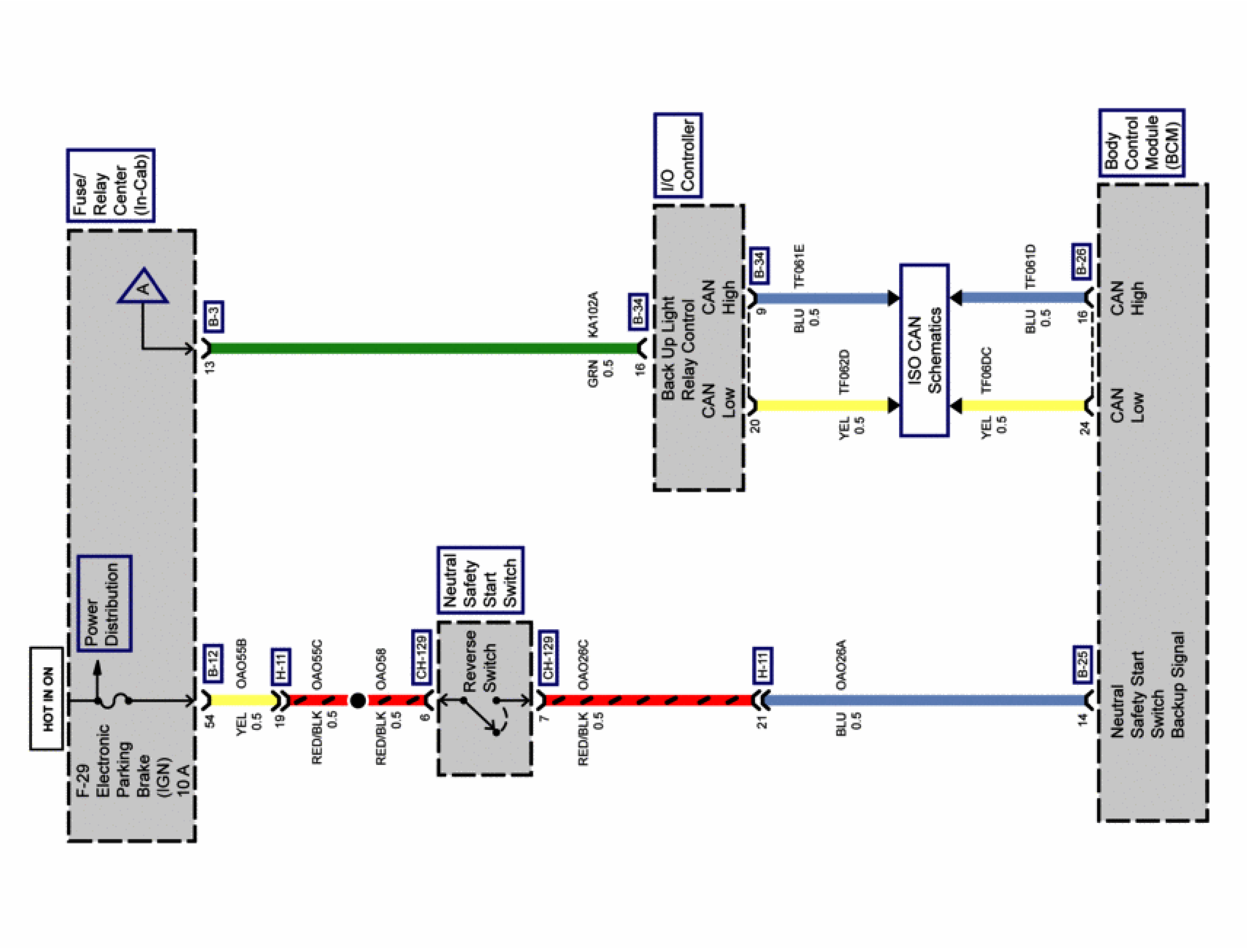
Roof Marker Lights


HOT WITH HEADLIGHT SWITCH ON
Fuse/ Relay Center (In-Cab)
Power Distribution
F-38 Tail Lights 10 A
B-11
10
BA062
RED 0.5
H-31
6
BA057R
GRY 0.5
4
2
3
Splice Pack R-10
BA058
GRY 0.5
4
3
Splice Pack R-18
BA056
GRY 0.5
R-22
1
Marker Light 1
R-22
2
BX036
BLK 0.5
3
4
Splice Pack R-17
BLK 0.5
BX038
BA052
GRY 0.5
R-23
1
Marker Light 2
R-23
2
BX032
BLK 0.5
2
3
Splice Pack R-16
4
BX037R
BLK 0.5
H-31
7
BX037B
BLK 0.5
9
Splice Pack B-150
10
ZZ007B
BLK 2
6
Splice Pack B-149
10
ZZ007G
BLK 3
S38
ZZ007A
BLK 3
B-243
Ground Distribution

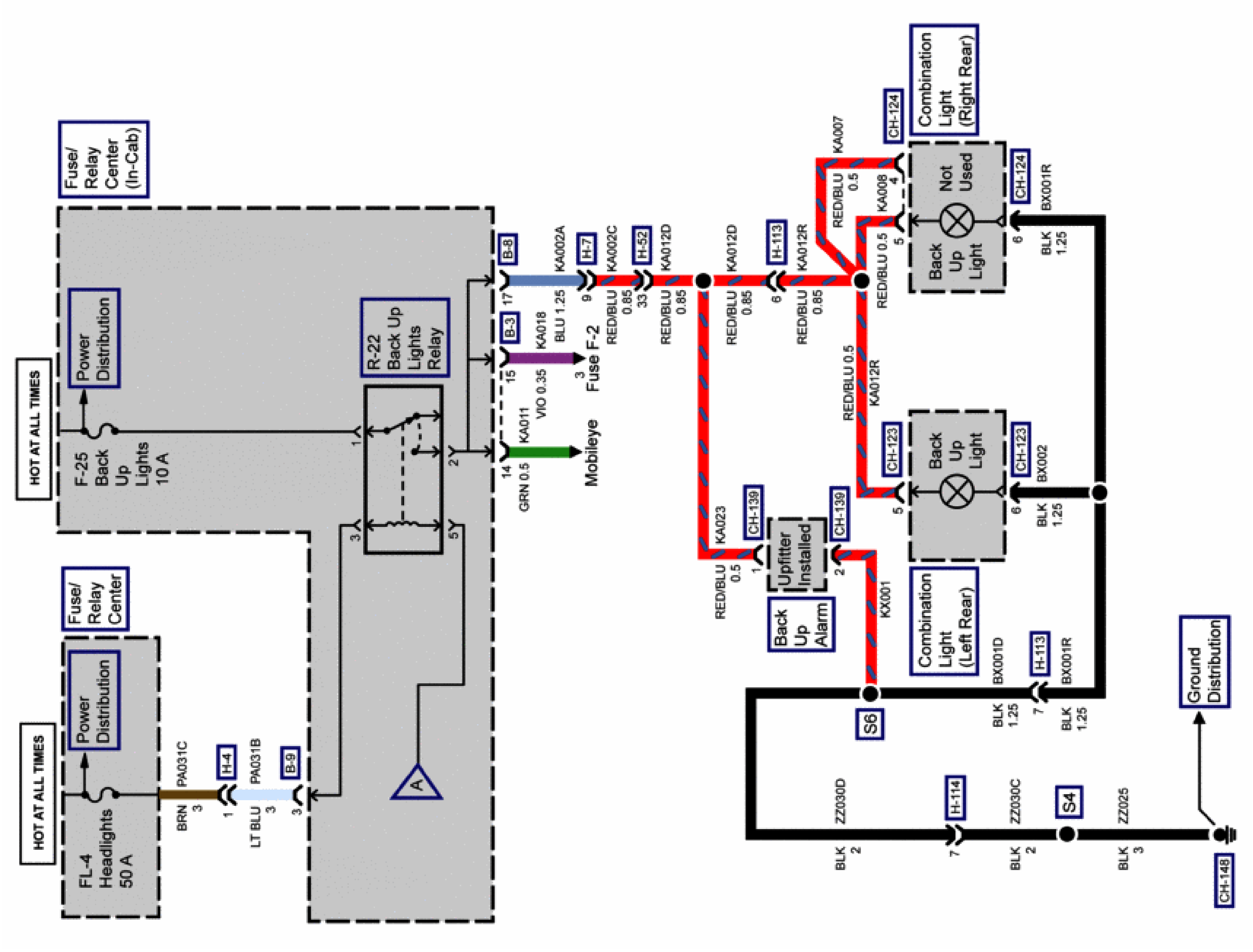
Roof Clearance Lights


HOT WITH HEADLIGHT SWITCH ON
Fuse/ Relay Center (In-Cab)
Power Distribution
F-38 Tail Lights 10 A
B-11
10
BA062
RED 0.5
H-31
6
BA057R
GRY 0.5
4
Splice Pack R-10
1
3
BA058
GRY 0.5
4
Splice Pack R-18
2
1
BA055
GRY 0.5
BA053
GRY 0.5
BA054
GRY 0.5
R-19
Clearance Light 1
1
2
R-19
BX033
R-20
Clearance Light 2
1
2
R-20
BX034
BLK 0.5
R-21
Clearance Light 3
1
2
R-21
BX035
BLK 0.5
Splice Pack R-17
2
4
1
BX038
BLK 0.5
3
Splice Pack R-16
1
4
BX037R
BLK 0.5
H-31
7
BX037B
BLK 0.5
9
Splice Pack B-150
10
ZZ007B
BLK 2
6
Splice Pack B-149
10
ZZ007G
BLK 3
S38
ZZ007A
BLK 3
B-243
Ground Distribution

Back Up Light Circuit

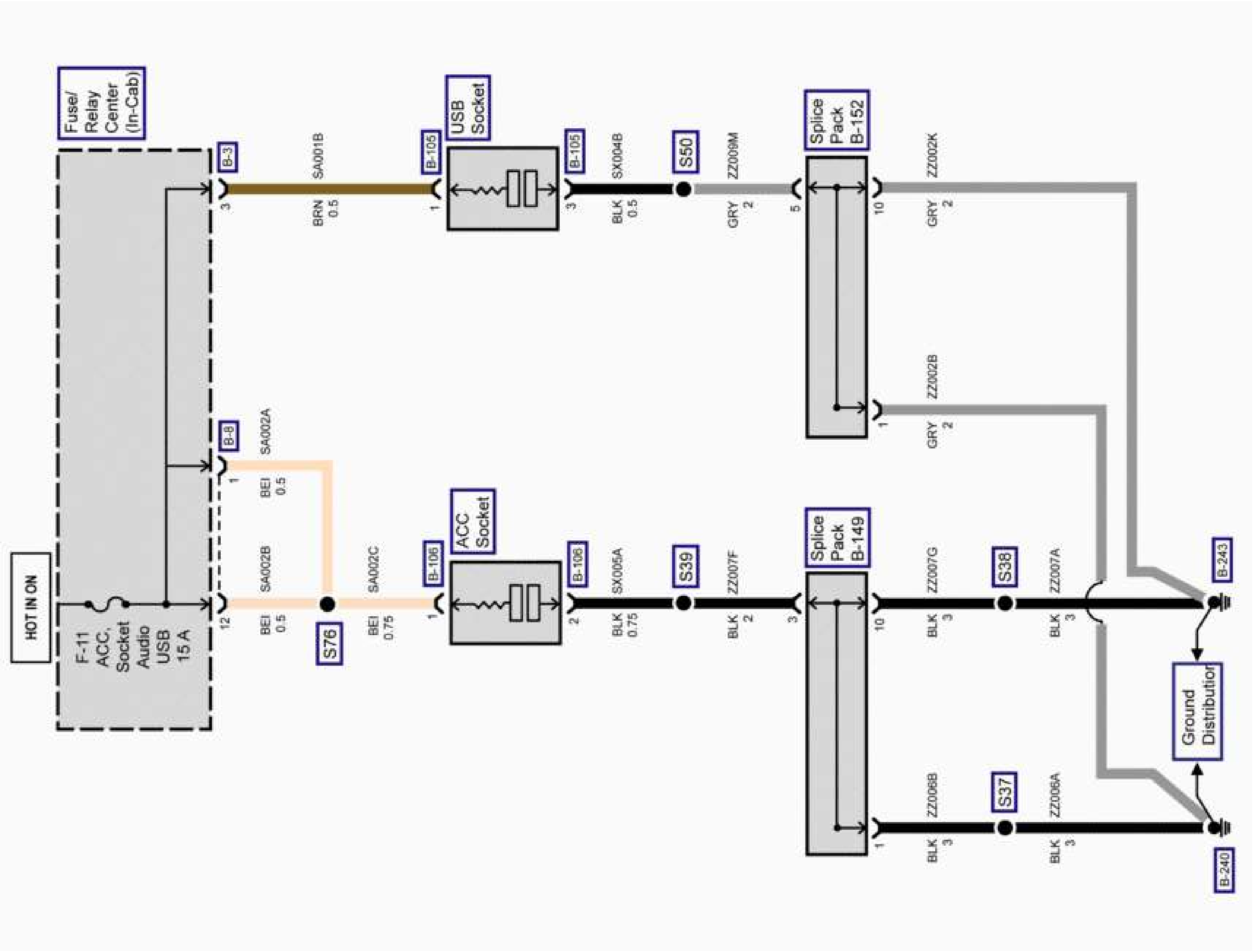

Fuse/ Relay Center (In-Cab)
A
B-3
13
KA102A
GRN 0.5
B-34
16
I/O Controller
Back Up Light Relay Control
CAN High
CAN Low
B-34
9
TF081E
BLU 0.5
20
TF062D
YEL 0.5
ISO CAN Schematics
TF081D
BLU 0.5
B-26
16
TF06DC
YEL 0.5
24
Body Control Module (BCM)
CAN High
CAN Low
HOT IN ON
Power Distribution
F-29 Electronic Parking Brake (IGN) 10 A
B-12
54
OAO55B
YEL 0.5
H-11
19
OAO55C
RED/BLK 0.5
OAO58
RED/BLK 0.5
CH-129
6
Neutral Safety Start Switch
Reverse Switch
CH-129
7
OAO26C
RED/BLK 0.5
H-11
21
OAO26A
BLU 0.5
B-25
14
Neutral Safety Start Switch Backup Signal

Back up Alarm Circuit

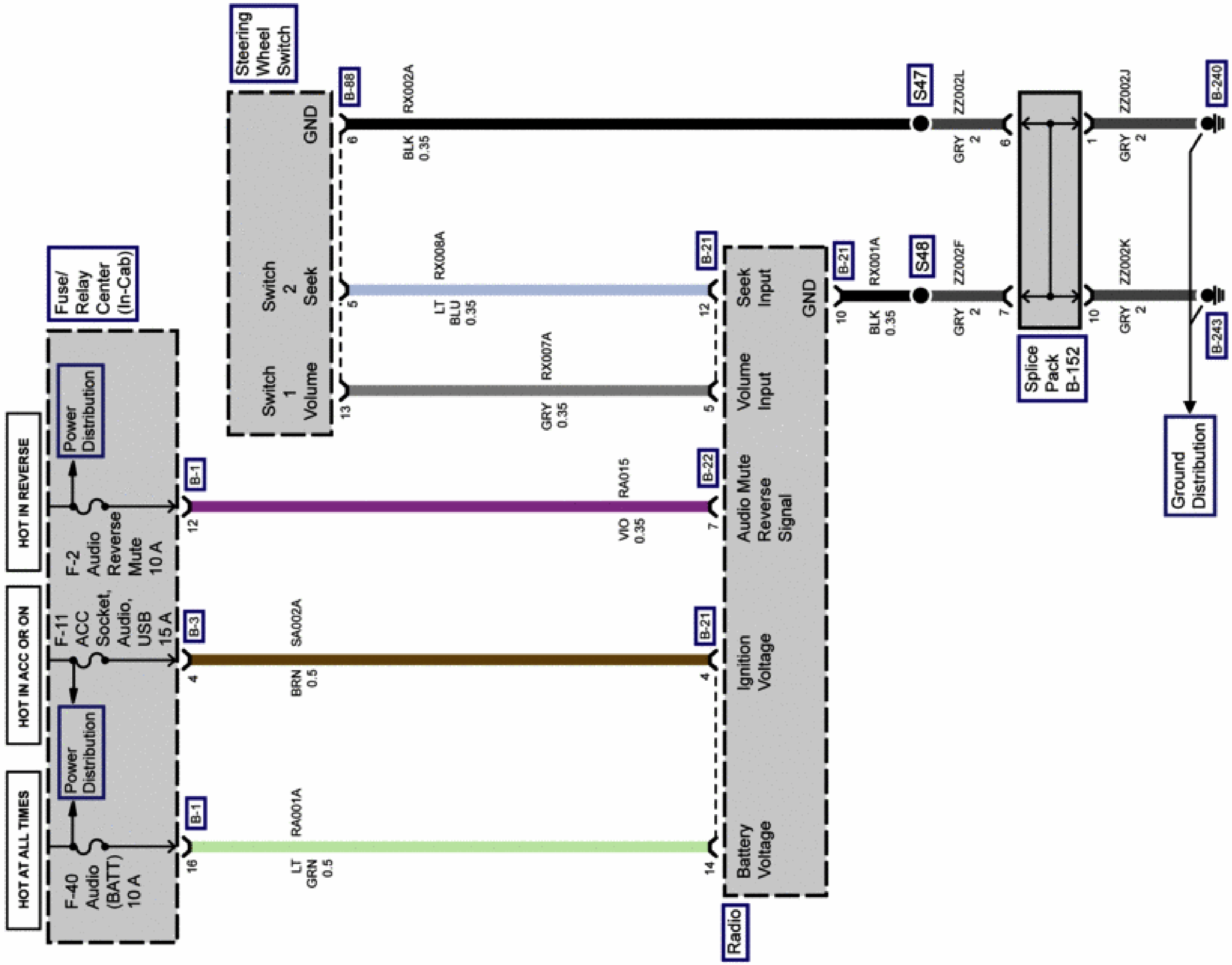

Fuse/ Relay Center (In-Cab)
HOT AT ALL TIMES
Power Distribution
F-25 Back Up Lights 10 A
R-22 Back Up Lights Relay
1
2
3
5
B-8
17
KA002A
BLU 1.25
H-7
9
KA002C
RED/BLU 0.85
H-52
33
KA012D
RED/BLU 0.85
B-3
15
KA018
VIO 0.35
3
Fuse F-2
14
KA011
GRN 0.5
Mobileye
KA012D
RED/BLU 0.85
H-113
6
KA012R
RED/BLU 0.85
KA007
RED/BLU 0.5
CH-124
4
KA008
5
RED/BLU 0.5
Combination Light (Right Rear)
Not Used
Back Up Light
CH-124
6
BX001R
BLK 1.25
RED/BLU 0.5
KA012R
CH-123
5
Back Up Light
CH-123
6
BX002
BLK 1.25
Combination Light (Left Rear)
KA023
RED/BLU 0.5
CH-139
1
Upfitter Installed
CH-139
2
KX001
Back Up Alarm
S6
BX001D
BLK 1.25
H-113
7
BX001R
BLK 1.25
Fuse/ Relay Center
HOT AT ALL TIMES
Power Distribution
FL-4 Headlights 50 A
PA031C
BRN 3
H-4
1
PA031B
LT BLU 3
B-9
3
A
ZZ030D
BLK 2
H-114
7
ZZ030C
BLK 2
S4
ZZ025
BLK 3
Ground Distribution
CH-148

2026 Chevrolet Low Cab Forward

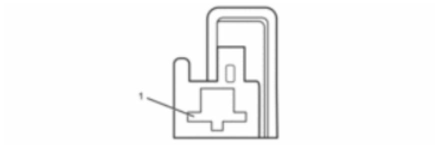
Power Outlet, USB Outlet


HOT IN ON
Fuse/ Relay Center (In-Cab)
F-11 ACC, Socket Audio USB 15 A
B-3
3
SA001B
BRN 0.5
B-105
1
USB Socket
B-105
3
SX004B
BLK 0.5
S50
ZZ009M
GRY 2
5
Splice Pack B-152
10
ZZ002K
GRY 2
1
ZZ002B
GRY 2
B-8
1
SA002A
BEI 0.5
12
SA002B
BEI 0.5
S76
SA002C
BEI 0.75
B-106
1
ACC Socket
B-106
2
SX005A
BLK 0.75
S39
ZZ007F
BLK 2
3
Splice Pack B-149
10
ZZ007G
BLK 3
S38
ZZ007A
BLK 3
B-243
Ground Distribution
1
ZZ006B
BLK 3
S37
ZZ006A
BLK 3
B-240

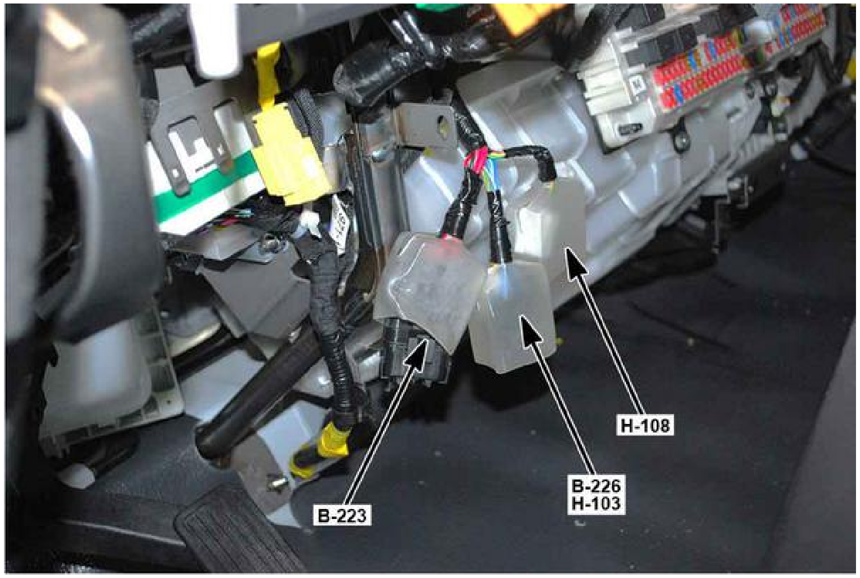
Radio Circuits

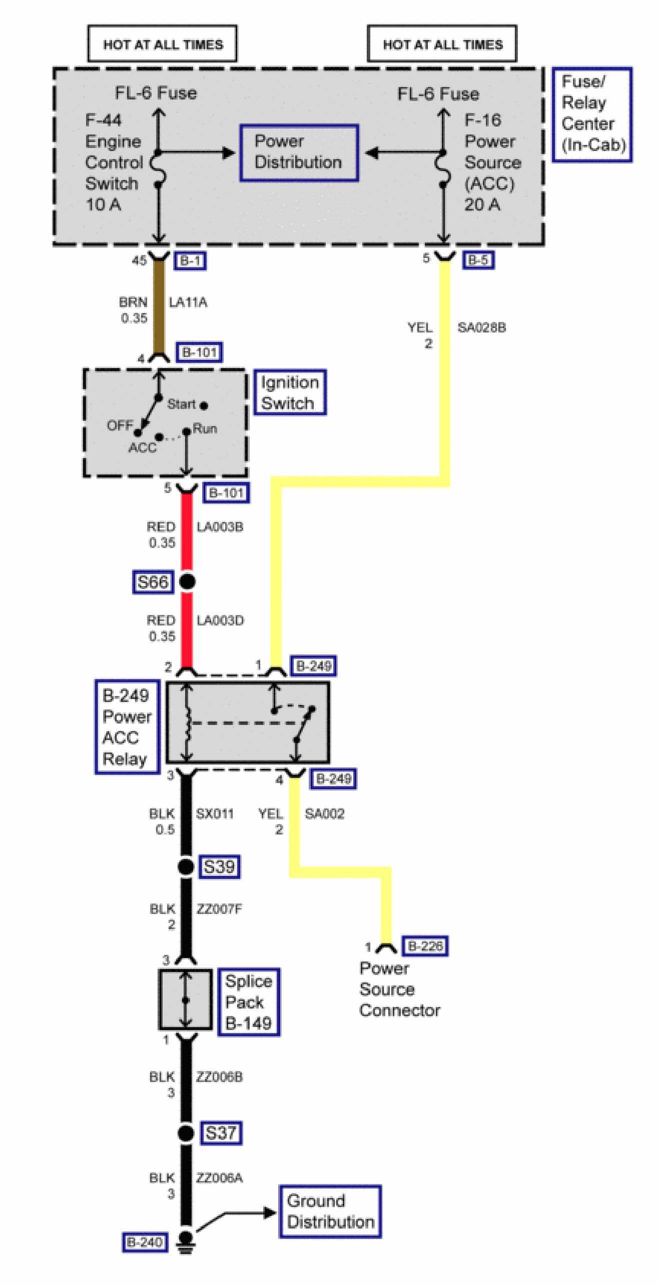

Steering Wheel Switch
GND
Switch 2 Seek
Switch 1 Volume
B-88
6
RX002A
BLK 0.35
S47
ZZ002L
GRY 2
6
1
ZZ002J
GRY 2
B-240
5
RX008A
LT BLU 0.35
B-21
12
Seek Input
GND
B-21
10
RX001A
BLK 0.35
S48
ZZ002F
GRY 2
7
10
ZZ002K
GRY 2
B-243
Splice Pack B-152
Ground Distribution
13
RX007A
GRY 0.35
5
Volume Input
Fuse/ Relay Center (In-Cab)
Power Distribution
HOT IN REVERSE
F-2 Audio Reverse Mute 10 A
B-1
12
RA015
VIO 0.35
B-22
7
Audio Mute Reverse Signal
HOT IN ACC OR ON
F-11 ACC Socket, Audio, USB 15 A
B-3
4
SA002A
BRN 0.5
B-21
4
Ignition Voltage
Power Distribution
HOT AT ALL TIMES
F-40 Audio (BATT) 10 A
B-1
16
RA001A
LT GRN 0.5
14
Battery Voltage
Radio

Auxiliary Power Source Circuit Diagram

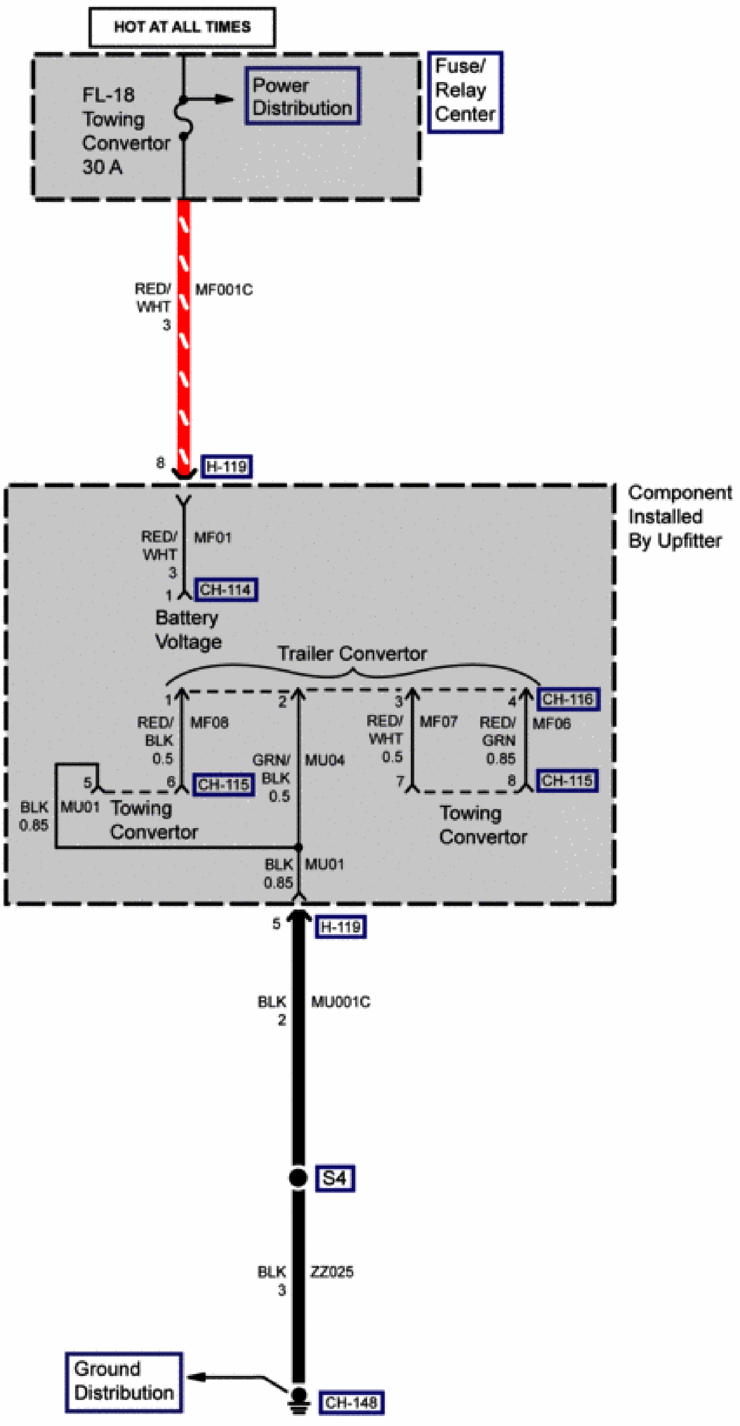
B-226 Power Source			
			
Connector Part Information	• **YAZAKI 7323-6317** • **1-WAY F (WHT)**		
Pin	**Wire Color**	**Circuit Number**	**Function**
1	YEL	SA002	FUSE F-11 POWER SUPPLY TO ACC SOCKET B-106 PIN 1

Lower Instrument Panel, Next to the Accelerator Pedal

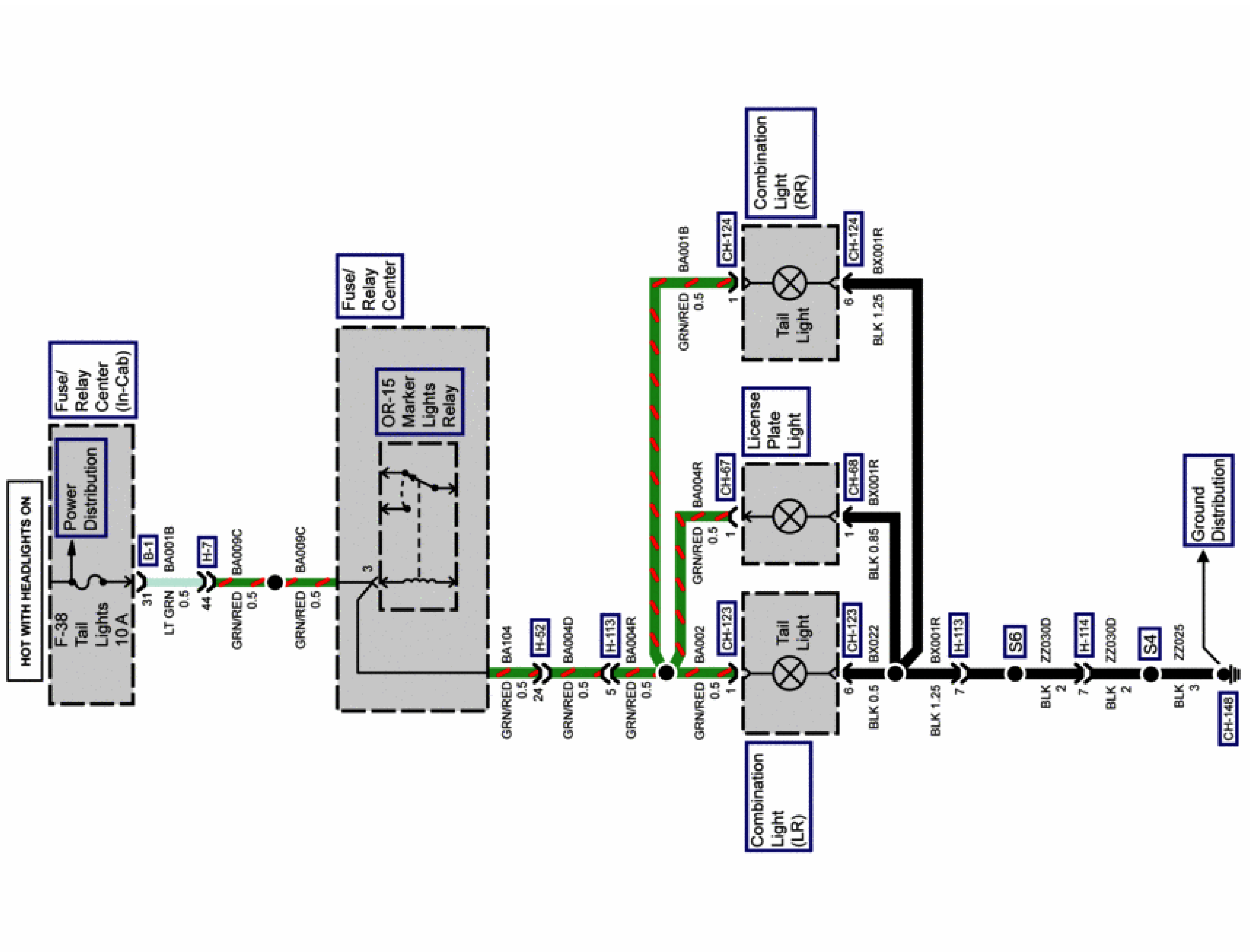

H-108
B-226
H-103
B-223


HOT AT ALL TIMES
HOT AT ALL TIMES
Fuse/ Relay Center (In-Cab)
FL-6 Fuse
F-44 Engine Control Switch 10 A
Power Distribution
FL-6 Fuse
F-16 Power Source (ACC) 20 A
45
B-1
5
B-5
BRN 0.35
LA11A
YEL 2
SA028B
4
B-101
Ignition Switch
Start
OFF
Run
ACC
5
B-101
RED 0.35
LA003B
S66
RED 0.35
LA003D
2
1
B-249
B-249 Power ACC Relay
3
4
B-249
BLK 0.5
SX011
YEL 2
SA002
S39
BLK 2
ZZ007F
1
B-226
Power Source Connector
3
Splice Pack B-149
1
BLK 3
ZZ006B
S37
BLK 3
ZZ006A
Ground Distribution
B-240

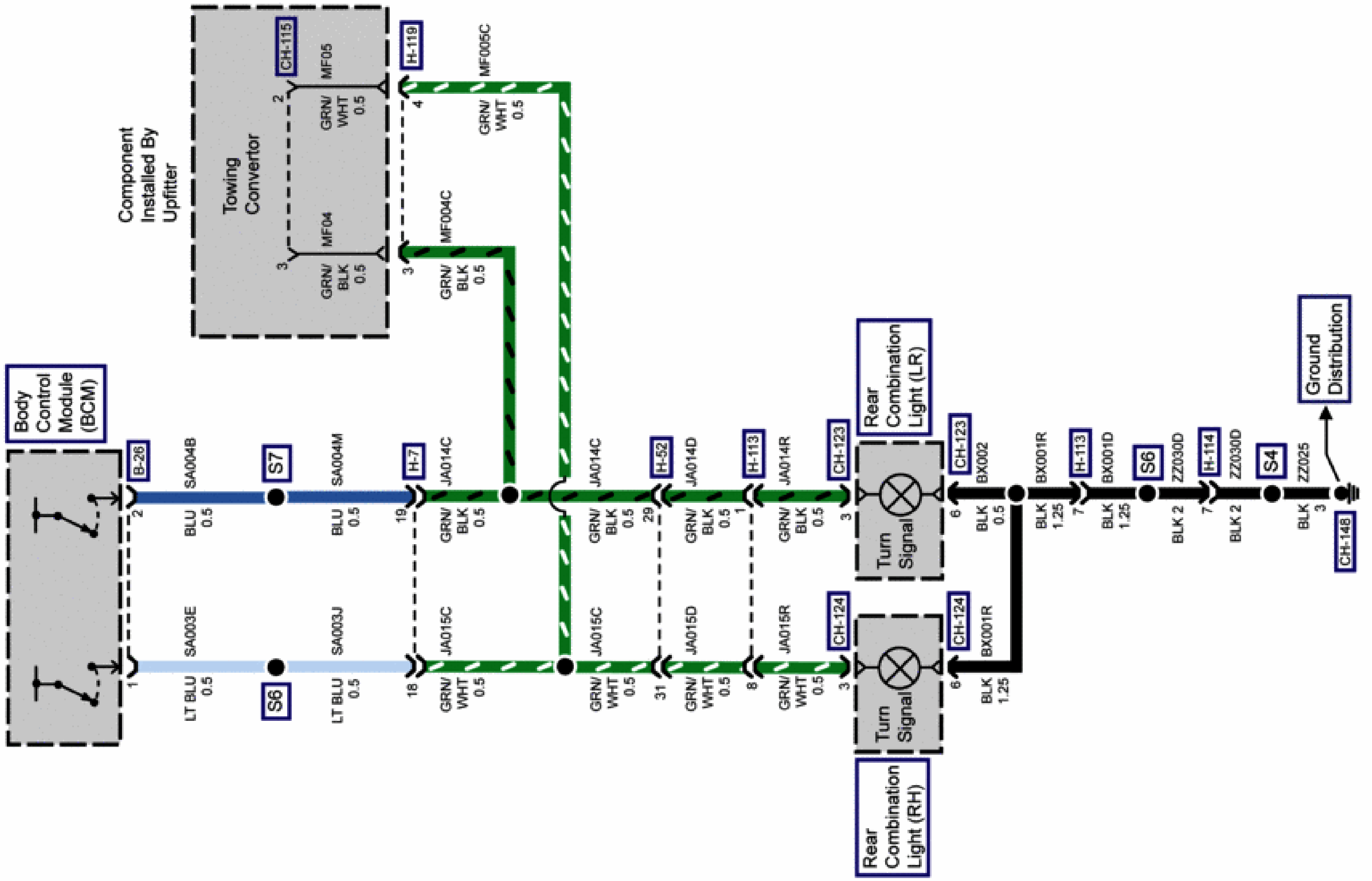
Trailer Brake Connector Circuit Diagram (Page 1 of 5)


HOT AT ALL TIMES
FL-18
Towing
Convertor
30 A
Power
Distribution
Fuse/
Relay
Center
RED/
WHT
3
MF001C
8
H-119
Component
Installed
By Upfitter
RED/
WHT
3
MF01
1
CH-114
Battery
Voltage
Trailer Convertor
1
RED/
BLK
0.5
MF08
2
GRN/
BLK
0.5
MU04
3
RED/
WHT
0.5
MF07
4
RED/
GRN
0.85
MF06
CH-116
5
6
CH-115
7
8
CH-115
BLK
0.85
MU01
Towing
Convertor
Towing
Convertor
BLK
0.85
MU01
5
H-119
BLK
2
MU001C
S4
BLK
3
ZZ025
Ground
Distribution
CH-148

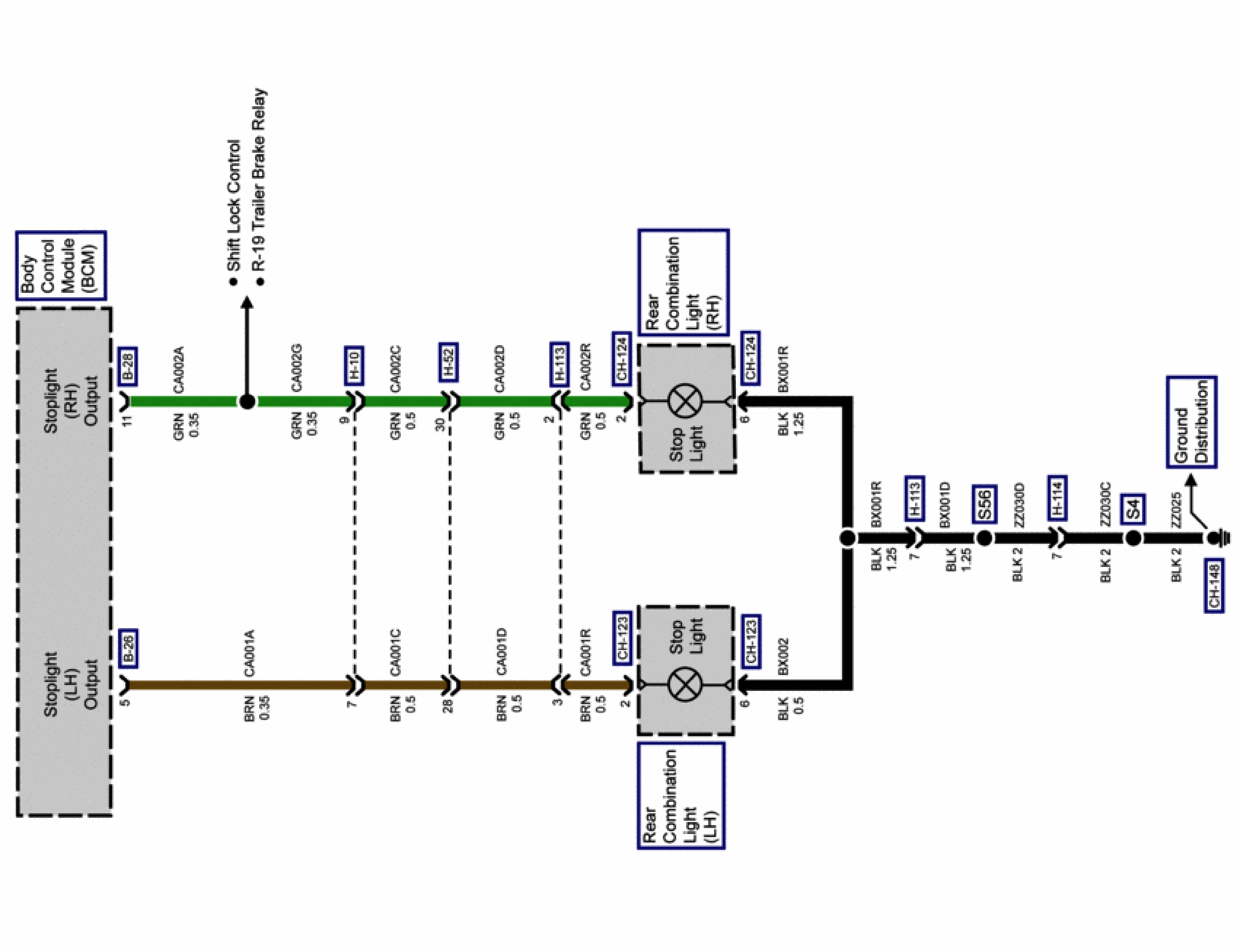
Trailer Brake Connector Circuit Diagram (Page 2 of 5)


HOT WITH HEADLIGHTS ON
Fuse/ Relay Center (In-Cab)
Power Distribution
F-38 Tail Lights 10 A
B-1
31
BA001B
LT GRN 0.5
H-7
44
BA009C
GRN/RED 0.5
BA009C
GRN/RED 0.5
Fuse/ Relay Center
OR-15 Marker Lights Relay
3
BA104
GRN/RED 0.5
24
H-52
BA004D
GRN/RED 0.5
5
H-113
BA004R
GRN/RED 0.5
BA001B
GRN/RED 0.5
1
CH-124
Combination Light (RR)
Tail Light
CH-124
6
BX001R
BLK 1.25
License Plate Light
CH-67
BA004R
GRN/RED 0.5
1
CH-68
1
BX001R
BLK 0.85
CH-123
BA002
GRN/RED 0.5
1
Tail Light
CH-123
6
BX022
BLK 0.5
Combination Light (LR)
BX001R
H-113
BLK 1.25
7
S6
ZZ030D
BLK 2
H-114
7
ZZ030D
BLK 2
S4
ZZ025
BLK 3
Ground Distribution
CH-148

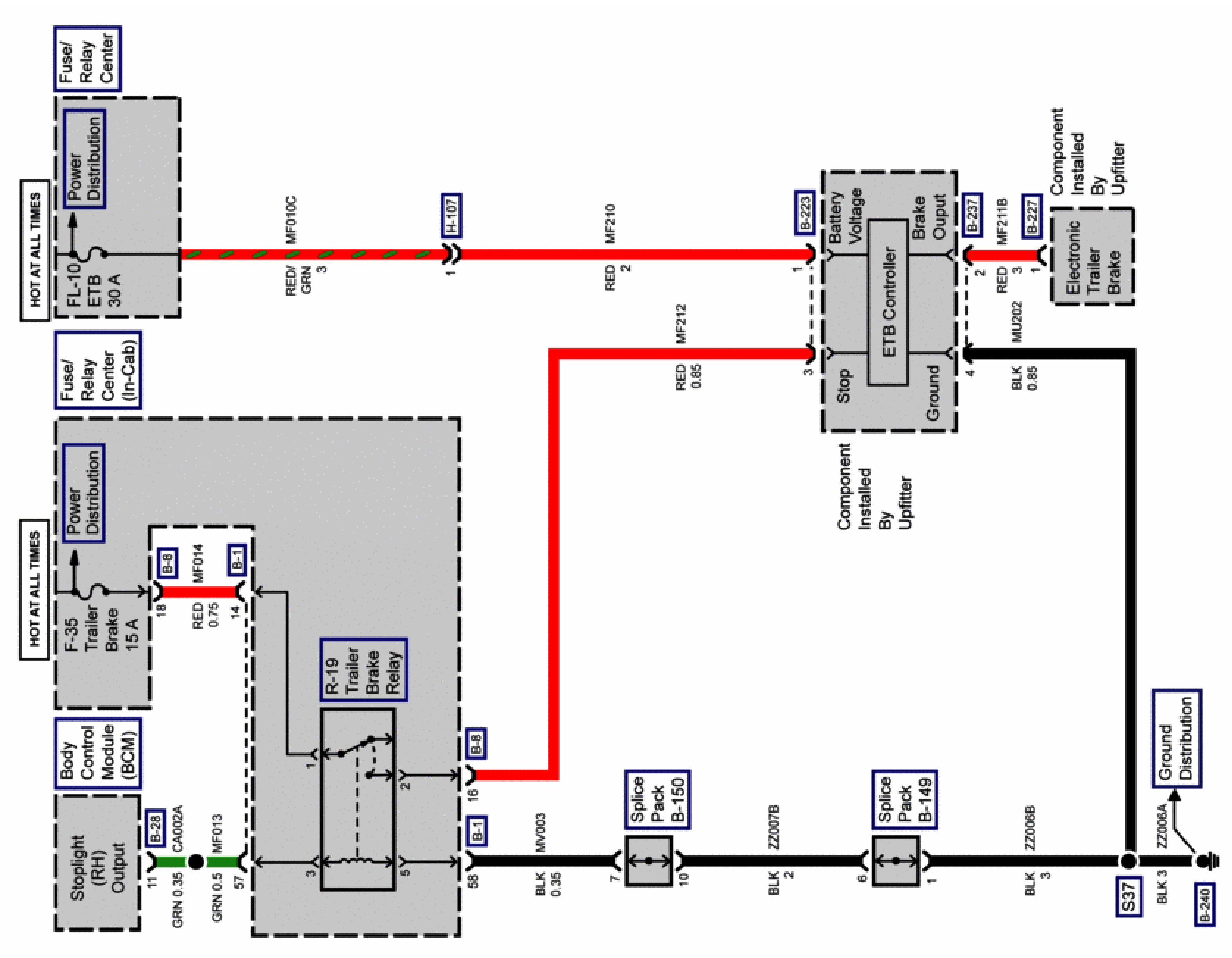
Trailer Brake Connector Circuit Diagram (Page 3 of 5)


Component Installed By Upfitter
Towing Convertor
CH-115
MF05
MF04
2
3
GRN/ WHT 0.5
GRN/ BLK 0.5
H-119
4
3
MF005C
MF004C
Body Control Module (BCM)
B-26
2
1
SA004B
SA003E
BLU 0.5
LT BLU 0.5
S7
S6
SA004M
SA003J
H-7
19
18
JA014C
JA015C
H-52
29
31
JA014D
JA015D
H-113
1
8
JA014R
JA015R
CH-123
CH-124
Rear Combination Light (LR)
Rear Combination Light (RH)
Turn Signal
6
BX002
BLK 0.5
BX001R
BLK 1.25
7
BX001D
ZZ030D
BLK 2
H-114
S4
ZZ025
BLK 3
CH-148
Ground Distribution

Trailer Brake Connector Circuit Diagram (Page 4 of 5)


Body Control Module (BCM)
Stoplight (RH) Output
Stoplight (LH) Output
B-28
11
CA002A
GRN 0.35
Shift Lock Control
R-19 Trailer Brake Relay
CA002G
GRN 0.35
H-10
9
CA002C
GRN 0.5
H-52
30
CA002D
GRN 0.5
H-113
2
CA002R
GRN 0.5
CH-124
2
Rear Combination Light (RH)
Stop Light
CH-124
6
BX001R
BLK 1.25
B-26
5
CA001A
BRN 0.35
7
CA001C
BRN 0.5
28
CA001D
BRN 0.5
3
CA001R
BRN 0.5
CH-123
2
Stop Light
Rear Combination Light (LH)
CH-123
6
BX002
BLK 0.5
BX001R
BLK 1.25
H-113
7
BX001D
BLK 1.25
S56
ZZ030D
BLK 2
H-114
7
ZZ030C
BLK 2
S4
ZZ025
BLK 2
Ground Distribution
CH-148

Trailer Brake Connector Circuit Diagram (Page 5 of 5)


Fuse/ Relay Center
HOT AT ALL TIMES
Power Distribution
FL-10 ETB 30 A
MF010C
RED/ GRN 3
H-107
1
MF210
RED 2
B-223
1
Battery Voltage
Brake Ouput
ETB Controller
Stop
Ground
B-237
2
MF211B
RED 3
B-227
1
Component Installed By Upfitter
Electronic Trailer Brake
MF212
RED 0.85
3
4
MU202
BLK 0.85
Component Installed By Upfitter
Fuse/ Relay Center (In-Cab)
HOT AT ALL TIMES
Power Distribution
F-35 Trailer Brake 15 A
B-8
18
MF014
RED 0.75
B-1
14
R-19 Trailer Brake Relay
1
2
3
5
B-8
16
B-1
58
Body Control Module (BCM)
Stoplight (RH) Output
B-28
11
CA002A
GRN 0.35
MF013
GRN 0.5
57
MV003
BLK 0.35
7
Splice Pack B-150
10
ZZ007B
BLK 2
6
Splice Pack B-149
1
ZZ006B
BLK 3
S37
ZZ006A
BLK 3
Ground Distribution
B-240

Model Year Diesel Trailer Brake Controller Wiring, Activation and Trailer Wiring Connector

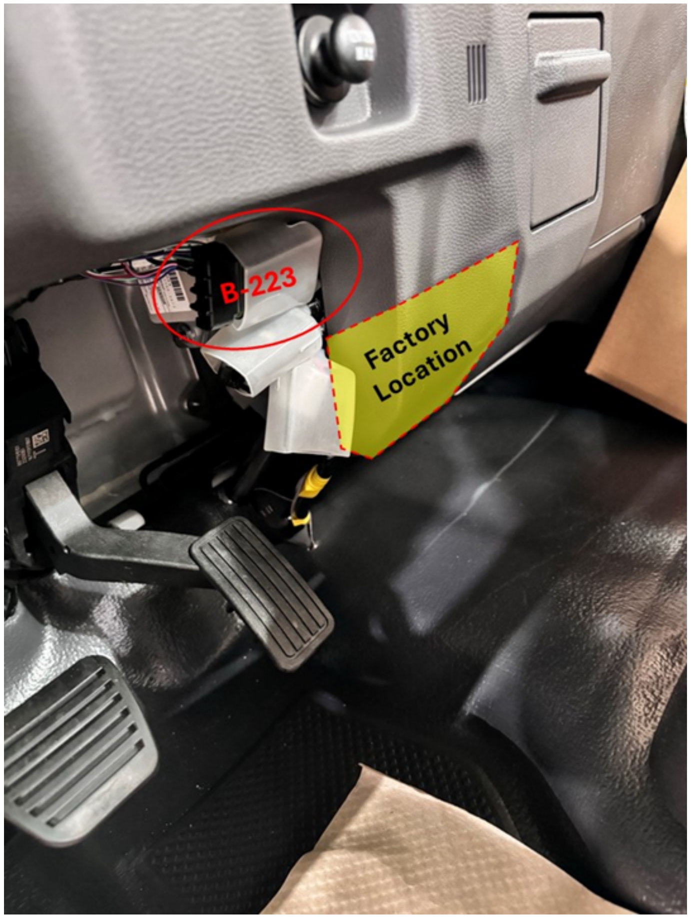
Introduction:

Beginning with the 2011 Model Year LCF feature integrated electronic trailer brake controller wiring and a dedicated chassis wiring harness for control of trailer stop, turn, and tail lamps. ***Note: the electronic brake controller is not supplied with the vehicle.***

Integrated Electronic Brake Controller Wiring and Activation:

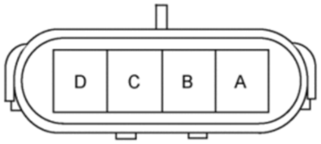
The connection point for an electronic trailer brake controller is located behind the dash panel within the 4-pin connector shown below (B-123). The brake signal wire in Pin 2 (MF211B) is activated by the installation of a relay in the "R-19" position within the in-cab relay console located in the center of the dash just above floor level.

B-223 Location



B-223 Connector

B-223 ETB_CONT

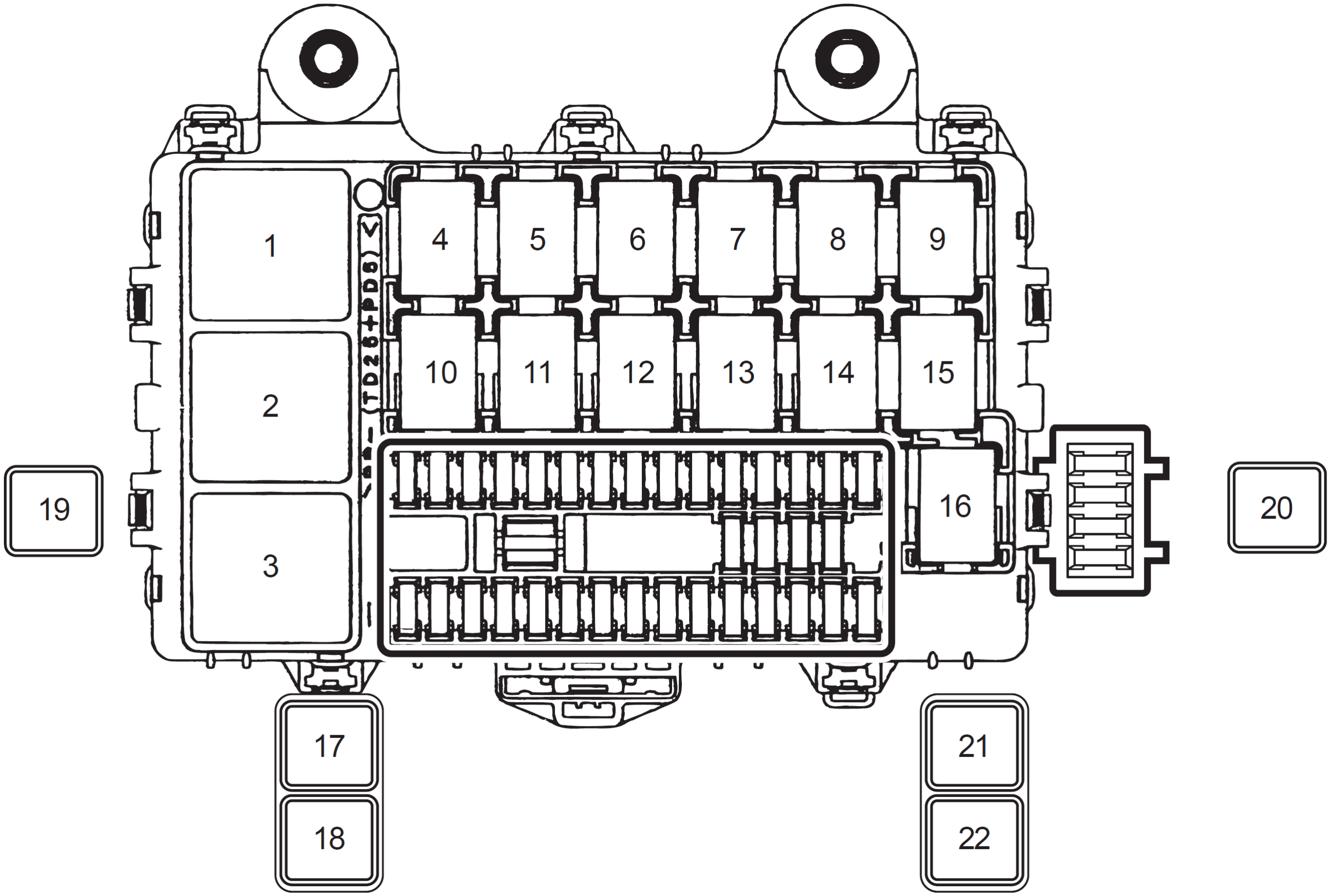


Connector Part Information	- **DELPHI 12010974** - **4-WAY M (BLK)**

Pin	Wire Color	Circuit Number	Function
1	RED	MF210	FUSE FL-10- POWER SUPPLY FROM H-107 PIN 1
2	RED	MF211B	BRAKE OUTPUT SIGNAL TO B-237 PIN 1
3	RED	MF212	FUSE F-35 POWER SUPPLY FROM B-8 PIN 2
4	BLK	MU202	GROUND FROM S37

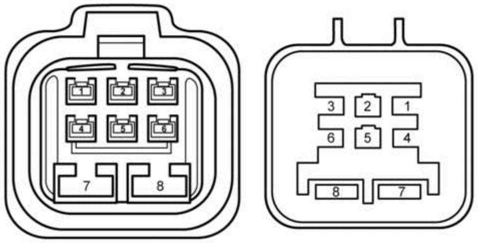
The R19 relay is not supplied with the vehicle. The relay can be ordered from your Authorized Chevrolet Dealer’s parts Department.

In-cab Fuse Panel


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

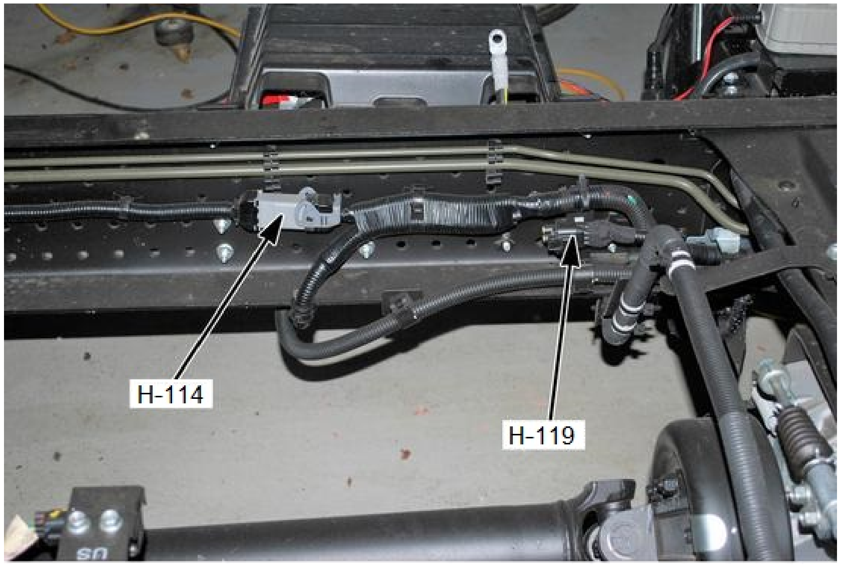
Trailer Wiring Connector Diagram

H-119 Front Frame Harness to Towing Converter (Upfitter installed)



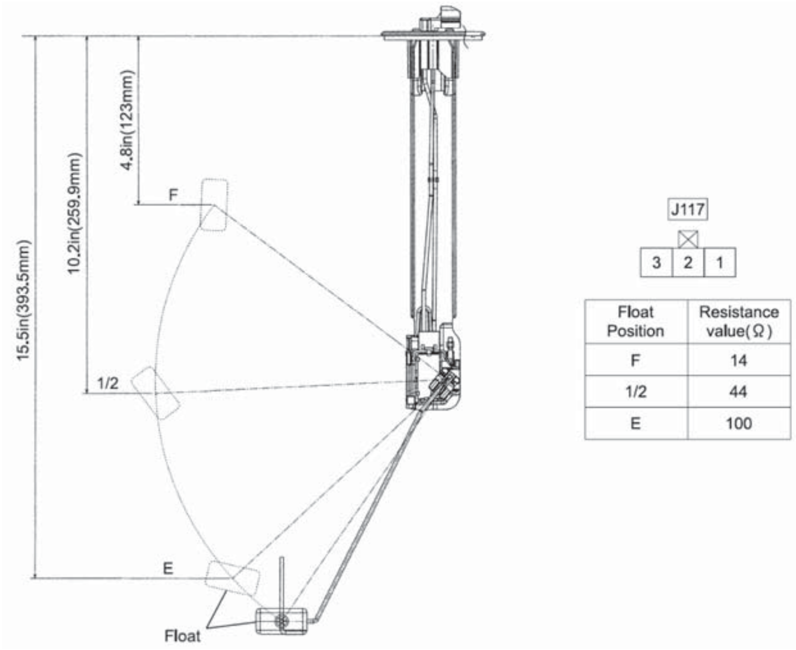
Connector Part Information	• FURUKAWA_R020049 • 8-WAY F (BLK)			Connector Part Information	• FURUKAWA_R020054 • 8-WAY M (BLK)		
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
1	GRN	MF02	STOP LIGHT (RH) TOWING OUTPUT TO CH-115 PIN 1	1	GRN	MF002C	STOP LIGHT (RH) TOWING OUTPUT FROM H-10 PIN 9
2	GRN/RED	MF03	FUSE F-38 POWER SUPPLY TO CH-115 PIN 4	2	GRN/RED	MF203	FUSE F-38 POWER SUPPLY FROM H-7 PIN 44
3	GRN/BLK	MF04	LEFT REAR TOWING TURN SIGNAL TO CH-115 PIN 3	3	GRN/BLK	MF004C	LEFT REAR TOWING TURN SIGNAL FROM H-7 PIN 19
4	GRN/WHT	MF05	RIGHT REAR TOWING TURN SIGNAL TO CH-115 PIN 2	4	GRN/WHT	MF005C	RIGHT REAR TOWING TURN SIGNAL FROM H-7 PIN 18
5	BLK	MU01	GROUND TO CH-115 PIN 5, CH-116 PIN 2	5	BLK	MU001C	GROUND FROM S4
6	-	-	NOT USED	6	RED/BLU	MF209C	NOT USED
7	-	-	NOT USED	7	RED	MF211C	NOT USED
8	RED/WHT	MF01	FUSE FL-18 POWER SUPPLY TO CH-114 PIN 1	8	RED/WHT	MF001C	FUSE FL-18 POWER SUPPLY

Left Inner Side of the Frame Rail, Next to the Batteries.



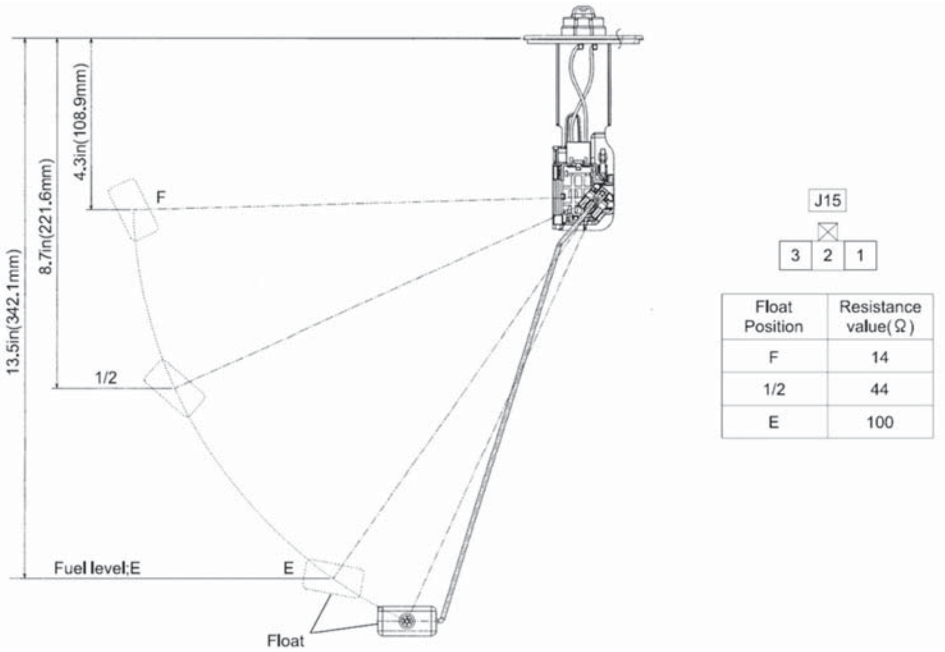
Fuel Tank Sending Unit Resistance (In-Frame Tank & Side Frame Tank)

Fuel Tank Sending Unit Resistance (In-Frame Tank)


4.8in(123mm)
10.2in(259.9mm)
15.5in(393.5mm)
F
1/2
E
Float
J117
3
2
1

Float Position	Resistance value(Ω)
F	14
1/2	44
E	100

Fuel Tank Sending Unit Resistance (Side Frame Tank)


4.3in(108.9mm)
8.7in(221.6mm)
13.5in(342.1mm)
F
1/2
Fuel level;E
E
Float
J15
3
2
1

Float Position	Resistance value(Ω)
F	14
1/2	44
E	100

CAN Interface Converter Information

CAN Interace Converter Overview

- Starting with the 2025MY LCF Diesel, read-only SAE J1939 CAN information is available from the chassis without the need for additional equipment.
    - LCF diesel chassis from 2017-2024MY require an optional CAN Interface Converter to access ready-only SAE J1939 CAN information. See the corresponding model year's Body Builder Guide for additional details.
- An optional extension harness is available that converts the standard connector into an SAE J1939 connector.
- The CAN data broadcasted from the CAN Interface Converter module is a read only SAE J1939 broadcast; commands, requests, and acknowledgements are not supported.
- The Isuzu N-Series uses twisted pair cables with no shield. The electrical properties (resistance, impedance, capacitance, etc.) are defined in SAE J1939-15 Reduced Physical Layer.

Instructions for FMS Jumper Harness Installation

- The optional FMS Jumper Harness (P/N 7552536010) provides a standard 9-pin heavy duty connector for the integration of fleet management systems (FMS) and other telematics devices that require read-only CAN information from the chassis.
- To comply with California regulations, the final location of the provided 9-pin heavy duty connector (black) should not be within proximity of the existing chassis OBD connector. Figure 1 shows the restricted area where connector mounting should be avoided.
- The FMS Jumper Harness is located within the passenger side tray below the airbag as shown in Figure 2.

① Remove the FMS Jumper Harness from its bag and find the connectors on either end.
    a) Identify the white 6-pin female connector located on one end of the harness shown in Figure 3.
    b) Identify the black 9-pin heavy duty connector located on the other end of the harness Figure 3.
② Find the white 6-pin chassis side connector located at the edge of the dash adjacent to the cup holder as shown in Figure 4.
    a) Connect the white 6-pin female end of the FMS Jumper Harness with this connector.
③ Route the FMS Jumper Harness so that the 9-pin heavy duty connector's final location is outside of the restricted area indicated in Figure 1.
    a) The harness is 3 feet in length. Harness routing and the mounting location of telematics devices are at the installer's discretion.
④ Connect your FMS or other CAN device to the 9-pin heavy duty connector of the FMS Jumper Harness.

Important Note:
See Body Builder Guide Section 2 – Electrical Wiring and Harnessing for chassis wiring guidance

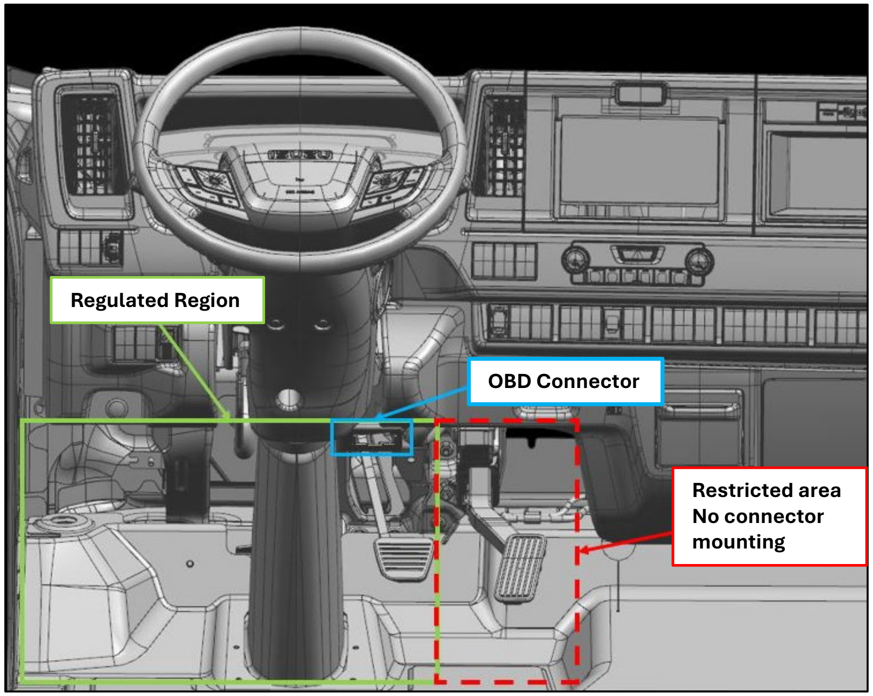


Figure 1

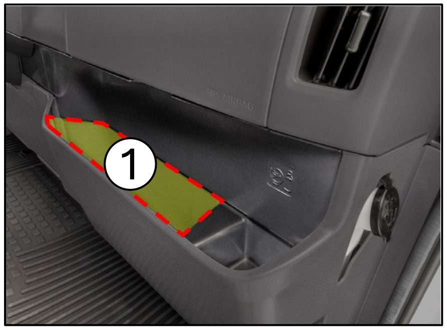


Figure 2

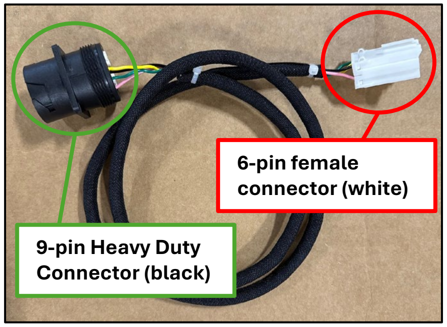


Figure 3

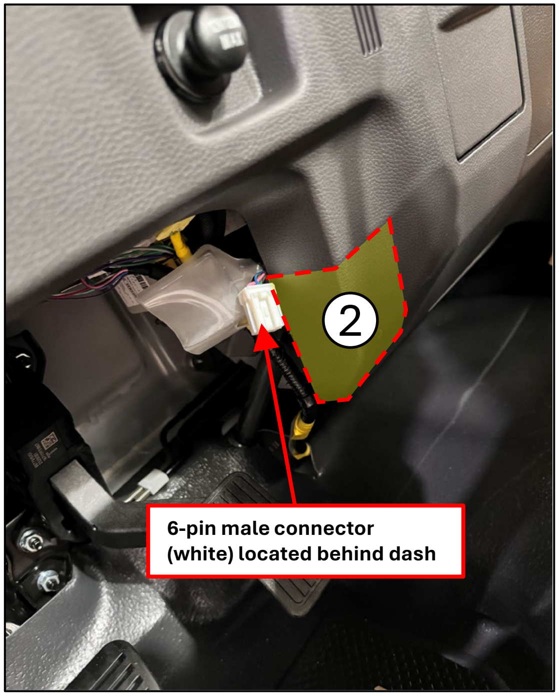


Figure 4

CAN Interface Converter General Guidelines

- Upfitters link their own control unit or telematics device to the CAN Interface Converter module via a connector. The upfitter is responsible for ensuring that the external CAN bus is used correctly.
- Control units connected to a CAN bus must be able to handle up to 100% of the CAN bus load and have no significant functional limitations or malfunctions.
- Avoid closing control loops over the CAN. The access time is relatively long and fast control loops require large amounts of bandwidth.
- Avoid CAN communication when the engine control switch is in the LOCK or ACC positions.
- Avoid CAN communication during the start sequence of the control units connected to the external CAN bus.
- During an engine start sequence (starter motor turning) the supply voltage can be low and communication from the CAN Interface Converter module cannot be guaranteed.
- Fault codes related to communication with the CAN Interface Converter module should not be set when the system voltage is under 9V.
- When the engine control switch is turned to the ON position, the CAN Interface Converter module starts sending messages within a few seconds.

CAN Interace Converter Connection Guidelines

Termination Resistor

- The CAN bus cable must be connected using a 120 Ohm resistor at each end in accordance with SAE J1939-15 Physical Layer. This allows CAN communication without interference.
  - The CAN Interface Converter harness contains one of the two 120 Ohm resistors.
  - The second termination resistor is required at the control unit / telematics device end of the harness.
- Certain devices have a built-in termination resistor (Figure 1) while others are not terminated. If the control unit is not equipped with an internal termination resistor, an external termination resistor must be connected as close to the control unit as possible (Figure 2).

Harness Connection

- The harness should be as short as possible to minimize the effect of electromagnetic interference.
- The length of the main cable must not exceed 100 feet between the CAN Interface Converter connector and Control Unit 1 (Figure 3).
- If more than one control unit is connected, the length of the cables between the main cable and additional control unit should not exceed 40 inches (Figure 3).
- There should be at least 4 inches between the nodes of each control unit cable on the main bus cable (Figure 3).
- The number of devices in the external CAN network should not exceed 9 control units.

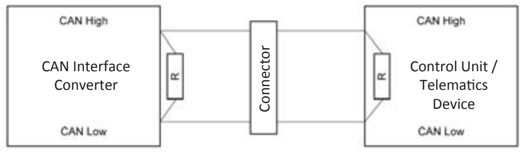

CAN High
CAN Interface Converter
CAN Low
R
Connector
R
CAN High
Control Unit / Telematics Device
CAN Low

Figure 1: Internal Termination Resistor

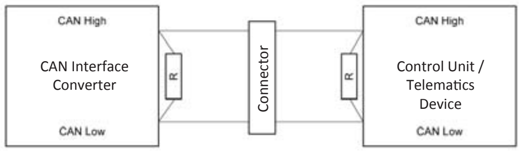

CAN High
CAN Interface Converter
CAN Low
R
Connector
R
CAN High
Control Unit / Telematics Device
CAN Low

Figure 2: External Termination Resistor

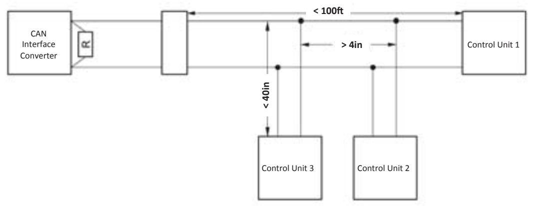
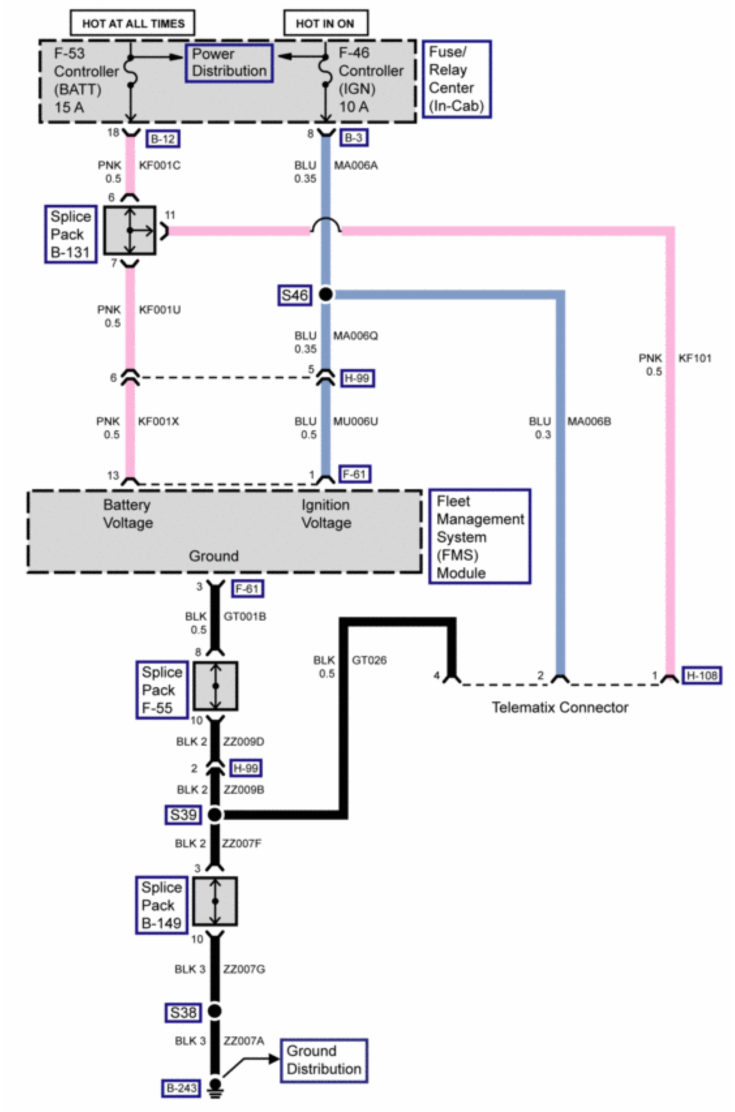

CAN Interface Converter
R
< 100ft
> 4in
< 40in
Control Unit 1
Control Unit 3
Control Unit 2

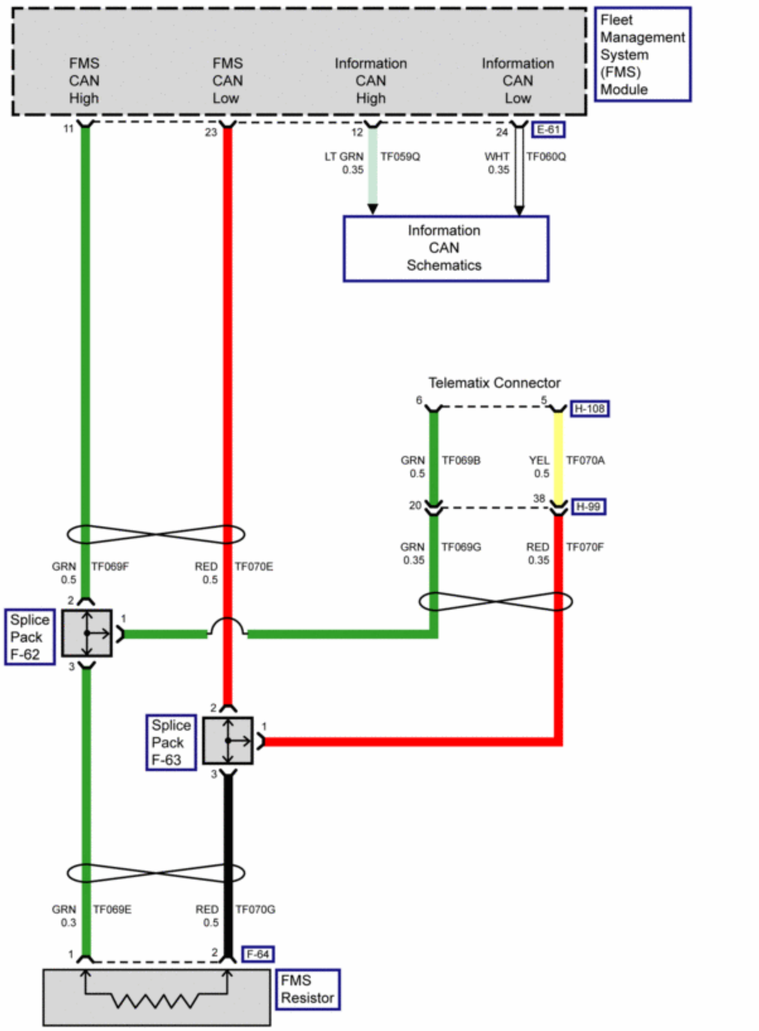
Figure 3: External CAN bus connection.

CAN Interface Converter Circuit Diagram

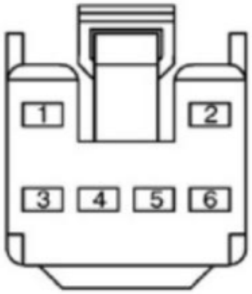
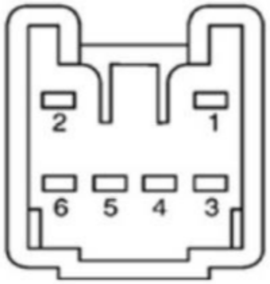
Module Power and Ground


HOT AT ALL TIMES
HOT IN ON
F-53 Controller (BATT) 15 A
Power Distribution
F-46 Controller (IGN) 10 A
Fuse/ Relay Center (In-Cab)
18
B-12
8
B-3
PNK 0.5
KF001C
BLU 0.35
MA006A
6
Splice Pack B-131
11
7
S46
PNK 0.5
KF001U
BLU 0.35
MA006Q
PNK 0.5
KF101
6
5
H-99
PNK 0.5
KF001X
BLU 0.5
MU006U
BLU 0.3
MA006B
13
1
F-61
Battery Voltage
Ignition Voltage
Ground
Fleet Management System (FMS) Module
3
F-61
BLK 0.5
GT001B
8
Splice Pack F-55
10
BLK 0.5
GT026
4
2
1
H-108
Telematix Connector
BLK 2
ZZ009D
2
H-99
BLK 2
ZZ009B
S39
BLK 2
ZZ007F
3
Splice Pack B-149
10
BLK 3
ZZ007G
S38
BLK 3
ZZ007A
Ground Distribution
B-243

Communication


FMS CAN High
FMS CAN Low
Information CAN High
Information CAN Low
Fleet Management System (FMS) Module
11
23
12
24
E-61
LT GRN 0.35
TF059Q
WHT 0.35
TF060Q
Information CAN Schematics
Telematix Connector
6
5
H-108
GRN 0.5
TF069B
YEL 0.5
TF070A
20
38
H-99
GRN 0.35
TF069G
RED 0.35
TF070F
GRN 0.5
TF069F
RED 0.5
TF070E
2
Splice Pack F-62
1
3
2
Splice Pack F-63
1
3
GRN 0.3
TF069E
RED 0.5
TF070G
1
2
F-64
FMS Resistor

CAN Interface Converter Connector

Connector End View (Vehicle Side)				Mating Connector (Control Unit / Telematics Equipment)			
							
Connector Part Information		**• YAZAKI 7323-8365** **• 6-WAY F (WHT)**		**Connector Part Information**		**•** **• 6-WAY M**	
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
1	PNK	KF101	FUSE F-53 POWER SUPPLY	1			
2	BLU	MA006B	FUSE F-46 POWER SUPPLY FROM S46A	2			
3	-	-	NOT USED	3	-	-	
4	BLK	GT026	GROUND S39	4			
5	YEL	TF070A	CAN LOW	5			
6	GRN	TF069B	CAN HIGH	6			

CAN Interface Converter Output

Summary of the messages supported by the CAN interface.
(Messages are sent to the external CAN bus from the vehicle.)

Message sent from vehicle	Identifier (Hex)	Specification	ISUZU FMS Interface
Cruise Control/Vehicle Speed 1	18 FE F1 00	SAE J1939-71	*
DM1(DTC record)	18 FE CA **	SAE J1939-73	*
Electronic Engine Controller 1	0C F0 04 00	SAE J1939-71	*
Electronic Engine Controller 2	0C F0 03 00	SAE J1939-71	*
Electronic Transmission Controller 5	1C FE C3 41	SAE J1939-71	*
Electronic Transmission Controller 2	18 F0 05 03	SAE J1939-71	*
Engine Hours, Revolutions	18 FE E5 41	SAE J1939-71	*
Engine Temperature 1	18 FE EE 00	SAE J1939-71	*
FMS-standard Interface Identity/Capabilities	1C FD D1 41	SAE J1939-71	*
Fuel Consumption (Liquid)	18 FE E9 41	SAE J1939-71	*
Fuel Economy (Liquid)	18 FE F2 41	SAE J1939-71	*
High Resolution Vehicle Distance	18 FE C1 41	SAE J1939-71	*
Idle Operation	18 FE DC 41	SAE J1939-71	*
Auxiliary Input/Output Status 1	18 FE D9 00	SAE J1939-71	*
Time/Date	18 FE E6 41	SAE J1939-71	*
Vehicle Distance	18 FE E0 41	SAE J1939-71	*
Vehicle Identification	18 FE EC 41	SAE J1939-71	*
Wheel Speed Information	18 FE BF 0B	SAE J1939-71	*

NOTES

* CAN Interface provides this message. Ap-
** plies to all values between 00h and FFh.

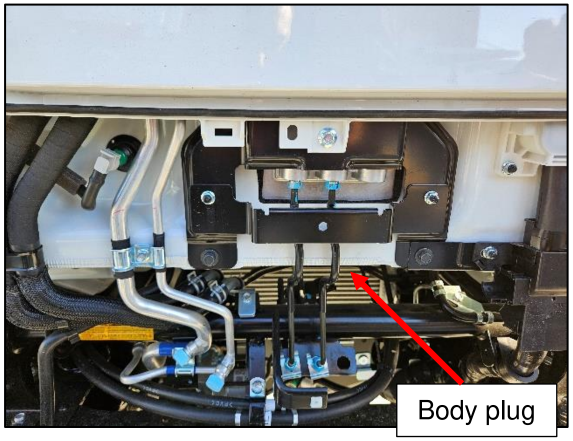
If additional CAN message information is required, call 1-770-740-1620 Ext. 4491 (East Coast) or 1-714-935-9327 (West Coast).

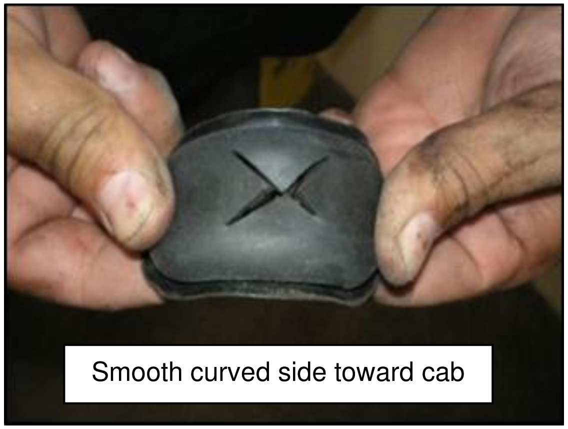
Cab Body Plug

To avoid drilling through the cab floor for electrical wiring, there is a body plug access point for routing wires into/out of the cab. Follow the instructions below to access this body plug.

Disassembly of Front Grille

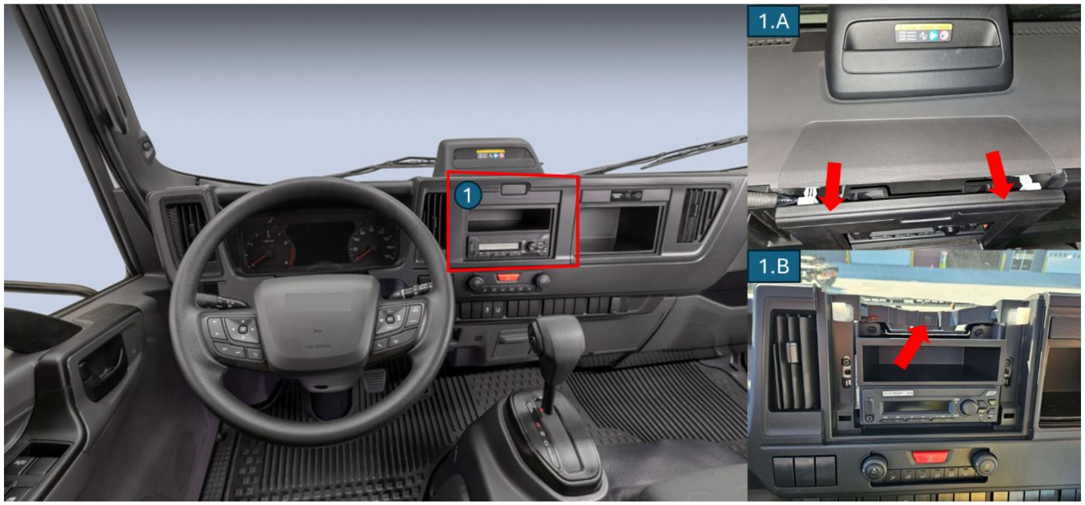
1. Remove one (1) phillips head screw <REUSE>.
2. Remove grille from cab by gently pulling outward to release five (5) top clips, one center clip, and two (2) lower clips.
3. From front of vehicle, locate body plug in middle of vehicle behind brake lines. Remove plug, cut approximately a 1”x1” X in the middle, set aside.



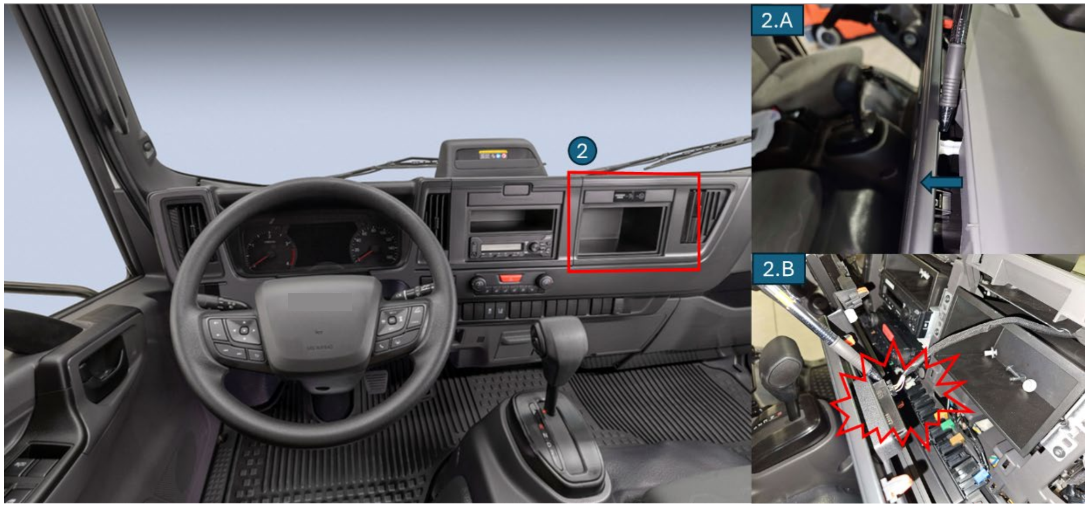


Upper Dash Trim Removal

- STEP 1: Remove radio trim (1.A) and retaining screw (1.B). Gently pull dash trim (no more than 1/2”) outward.



- STEP 2: Remove air bag indicator trim (2.A) and air bag indicator harness (2.B). Remove connectors from switches and or blanking plates (make note of each connectors position before removal). Set aside dash trim.



Back Up Camera Installation Information

Back Up Camera Installation Overview

- The Alpine HCE-C1100 Back Up Camera is available with RPO code I2V (Audio system with 7" diagonal color touch screen with backup camera).

- RPO codes I1V (Audio system with 7" diagonal color touch screen) and I2V (Audio system with 7" diagonal color touch screen with backup camera) will both include a pre-wired camera input connection at the end of the chassis frame. (Figure 5)

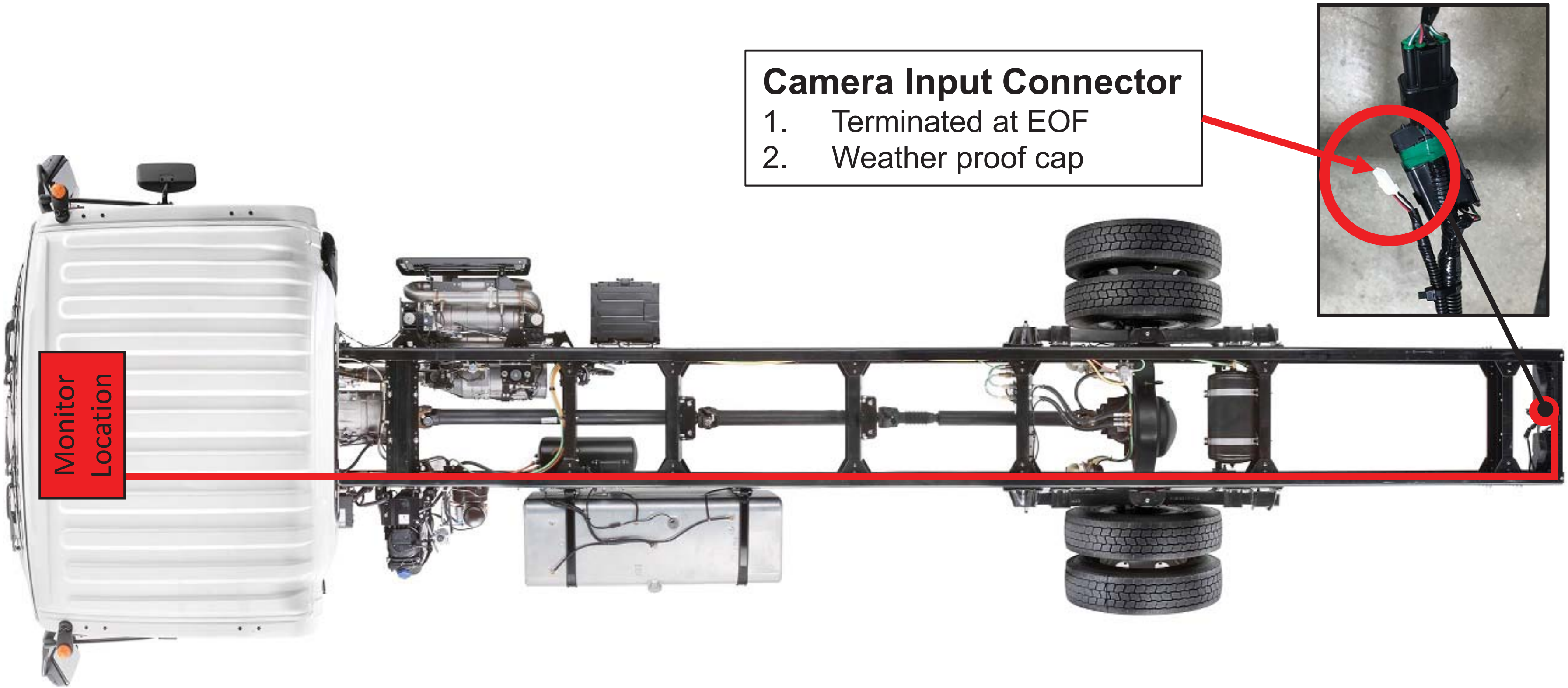

Camera Input Connector
1. Terminated at EOF
2. Weather proof cap
Monitor Location

Figure 5 – Camera Installation Overview

Back Up Camera Installation Kit Part Numbers

KIT PART NUMBER:	8975462720		
NO.	PART NUMBER	DESCRIPTION	QTY
1	8975438760	HCE-C1100 Back Up Camera	1
2	8975438730	Camera Bracket/Shroud	1
3	8975438750	23' Camera Extension Harness	1

Figure 6 – Camera Install Kit Part Numbers

- When RPO code I2V (Audio system with 7" diagonal color touch screen with backup camera) is selected, the Back Up Camera Kit will be shipped in the cab, in a poly bag, band tied to the center seat. (Figure 9).
- The Back Up Camera Kit will include the parts listed in Figure 6, provided in a sealed package. The package also includes a piece of shrink tube that should be used to protect the connection between the camera pigtail and the 23’ extension harness (see the circled location in Figure 8 below).

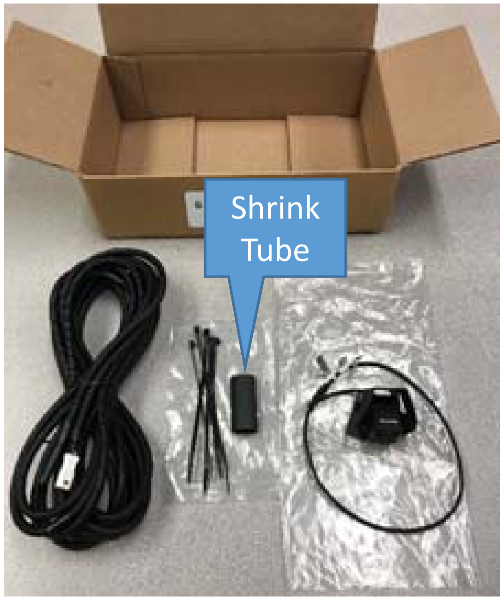


Figure 7 – Camera Install Kit

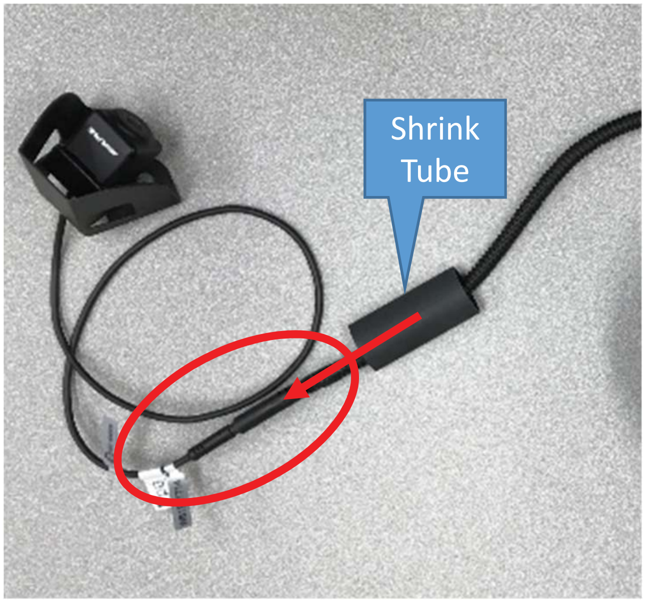


Figure 8 – Camera Install Kit Shipping Location

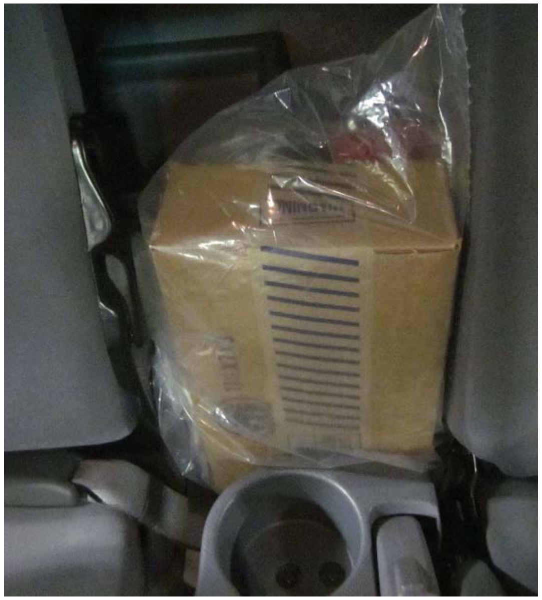


Figure 9 – Camera Install Kit Shipping Location

Back Up Camera Mounting Information

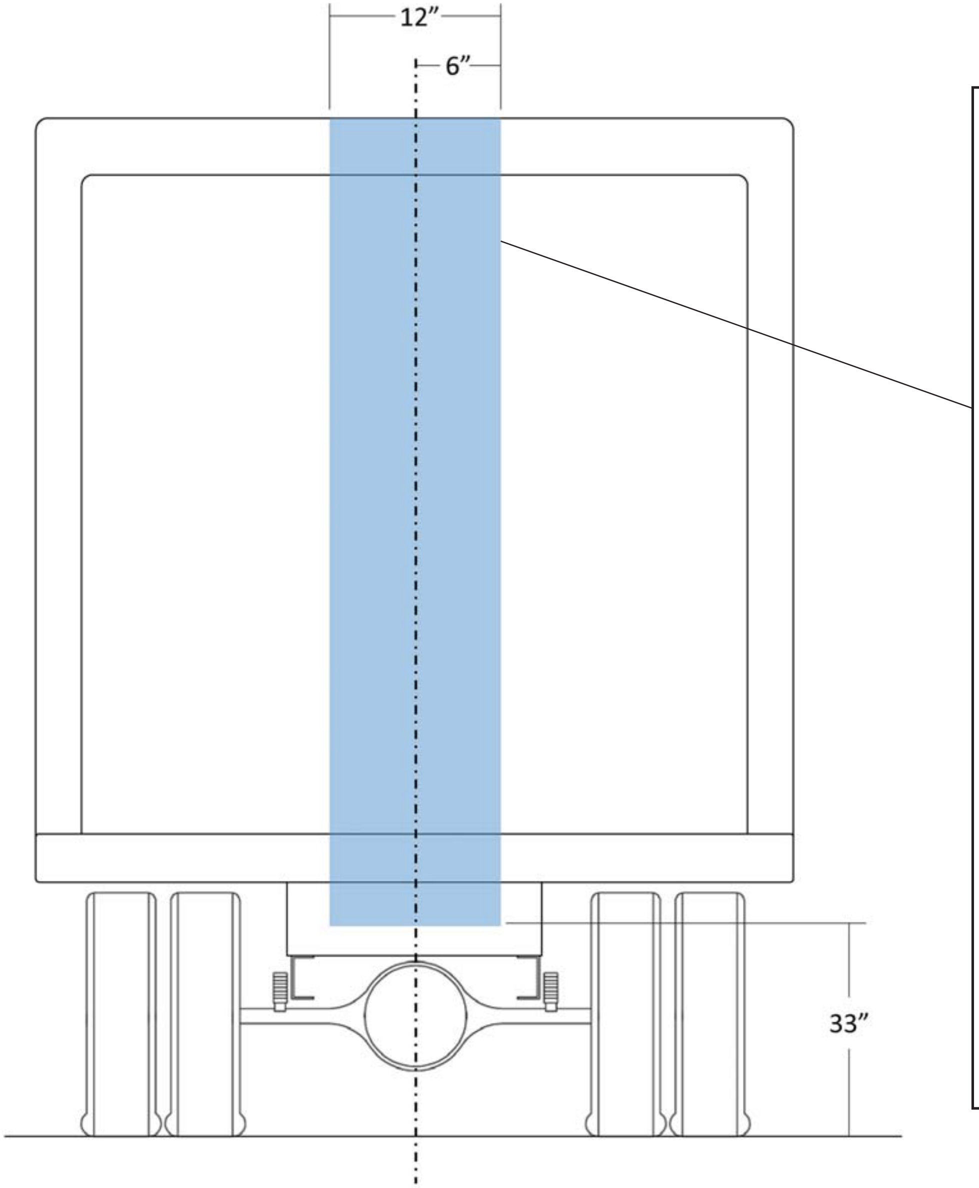


Figure 10 – Camera Mounting Area

HCE-C1100 Camera Mounting Plate Hole Pattern

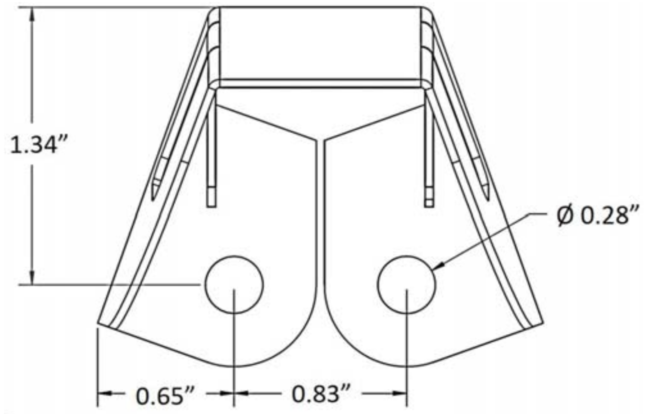


Figure 11 – Camera Mounting Hole Pattern

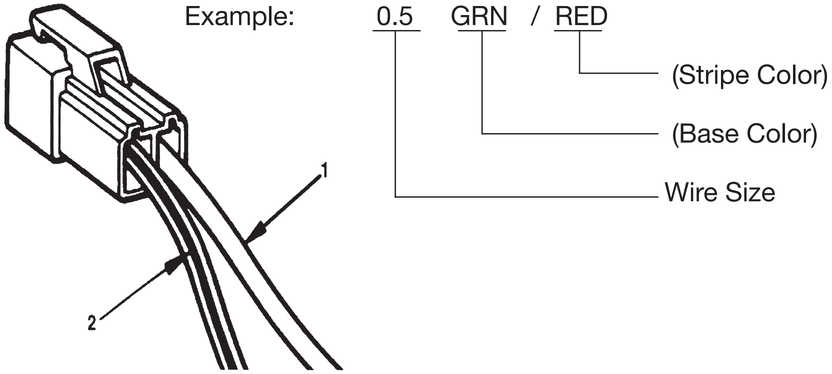
The Alpine HCE-C1100 camera should be mounted within the shaded area shown in Figure 10 to ensure proper rear visibility. In addition to the two mounting holes shown in Figure 11, a third hole is needed for the camera harness. This camera harness hole should be protected with a rubber grommet to prevent damage to the wiring that will pass through it. The rubber grommet and fasteners will not be included with the camera installation kit.

Diesel Electrical Section

Additional information including complete chassis wiring schematics, connector locations, wire sizes, and pin connector diagrams can be obtained from our BBM

Wire Colors

All wires have color-coded insulation. Wires belonging to a system's main harness will have a single color. Wires belonging to a system's sub-circuits will have a colored stripe. Striped wires use the following code to show wire size and colors.



1. Single Color Wire
2. Colored Stripe Wire

Figure 1

Abbreviations are used to indicate wire color within a circuit diagram. Refer to the following table.

Color-Coding	Meaning	Color-Coding	Meaning
B	Black	BR	Brown
W	White	LG	Light Green
R	Red	GR	Grey
G	Green	P	Pink
Y	Yellow	LB	Light Blue
L	Blue	V	Violet
O	Orange		

Figure 2

Wire Sizes

The size of wire used in a circuit is determined by the amount of current (amperage), the length of the circuit, and the voltage drop allowed. The following wire size and load capacity are specified by AWG (American Wire Gauge). (Nominal size means approximate cross sectional area.)

3. Outside Diameter
4. Cross Sectional Area

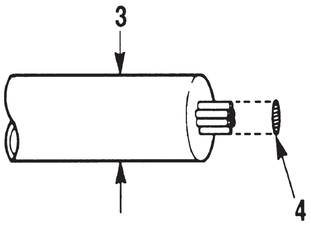


Figure 3

Nominal Size	Cross Sectional Area (mm^2)	Outside Diameter (mm)	Allowable Current (A)	AWG Size (Cross reference)
0.3	0.372	1.8	9	22
0.5	0.563	2.0	12	20
0.85	0.885	2.2	16	18
1.25	1.287	2.5	21	16
2	2.091	2.9	28	14
3	3.296	3.6	37.5	12
5	5.227	4.4	53	10
8	7.952	5.5	67	8
15	13.36	7.0	75	6
20	20.61	8.2	97	4

Figure 4

Fuses

Replacing Fuses

1. Before replacing fuses, apply the parking brake, then move the selector lever to the "P" (Park) position, and turn the engine control switch to the "LOCK" position.
2. Place the fuse puller on the fuse and pull it out. (The fuse puller is stored in the fuse box inside the cab.)
3. If the fuse appears as shown in the right hand side of the diagram at left, the fuse is blown. Replace with a spare fuse. (Spare fuses are stored in the fuse box inside the cab.)

Replacing Relays

1. Before replacing the relays, contact the nearest Chevrolet Dealer.

Fusible Links

1. The fusible link is primarily used to protect circuits where high amounts of current flow and where it would not be practical to use a fuse. For example, the starter circuit. When a current overload occurs, the fusible link melts open and interrupts the flow of current so as to prevent the rest of the wiring harness from burning.
2. Determine the cause of the overload before replacing the fusible link. The replacement fusible link must have the same amperage specification as the original fusible link.
3. Never replace a blown fusible link with fusible link of a different amperage specification. Doing so can result in an electrical fire or other serious circuit damage.

⚠ CAUTION

- Always use fuses specified by Isuzu. Using fuses with a rating other than that specified, or using wire or tin foil, etc., could result in fire or damage.
- If the new fuses blow right away and the cause is unknown, contact the nearest Isuzu Dealer.
- Do not inspect or replace fuses when the engine control switch is in the "ON" position. Doing so may lead to an accident.
- When inspecting fuses, be sure to park the vehicle on flat, level ground and apply chocks to the wheels.

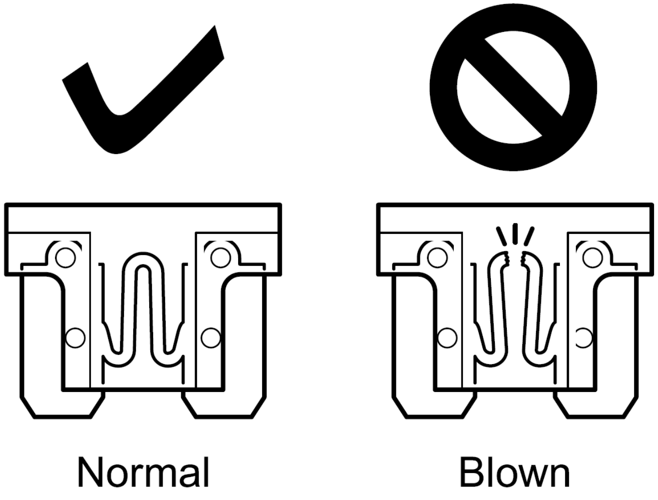


Figure 5

Fuse and Relay Box Locations

Interior

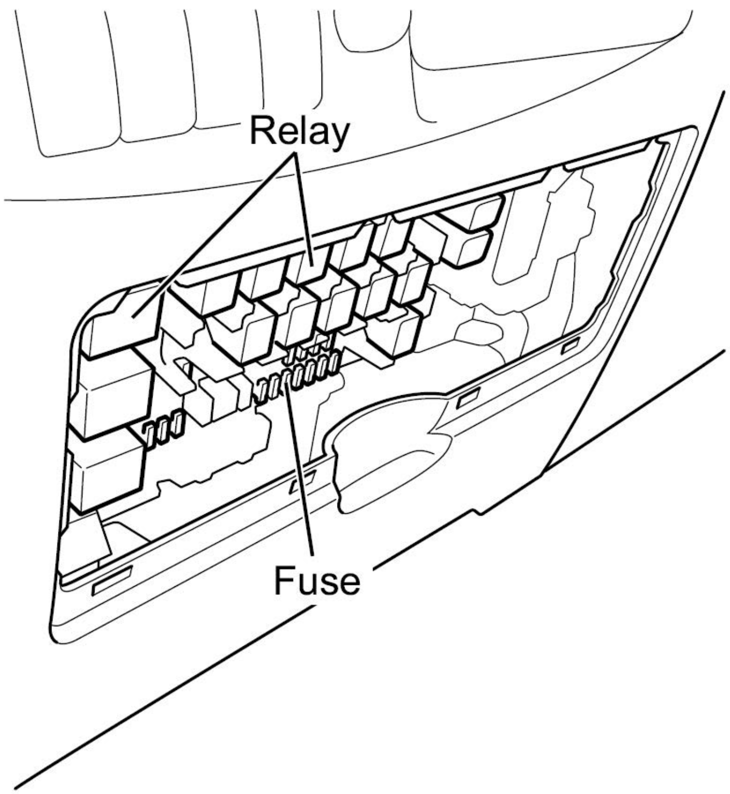


Figure 6

Exterior

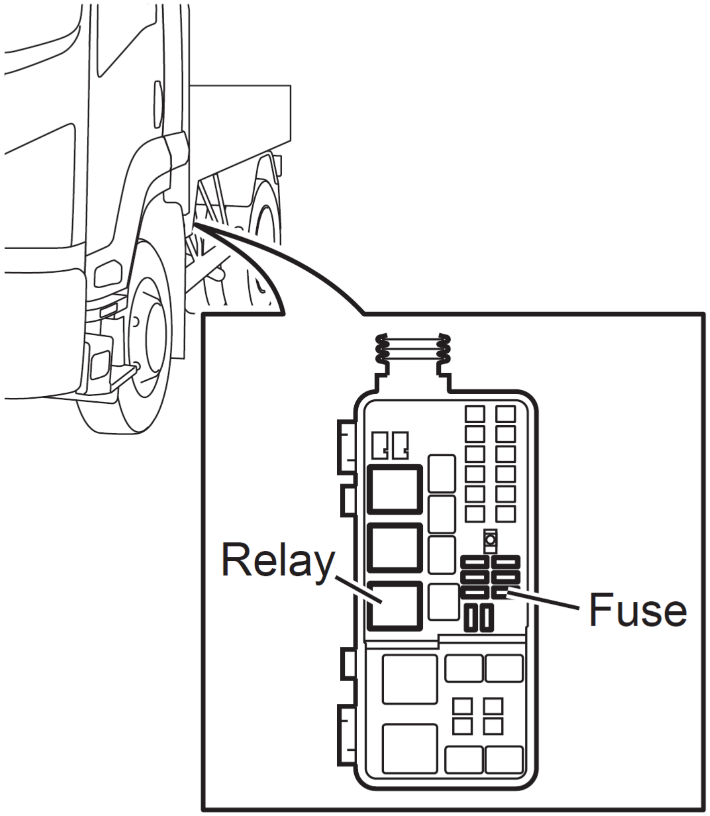


Figure 7

Fuse Location (interior)

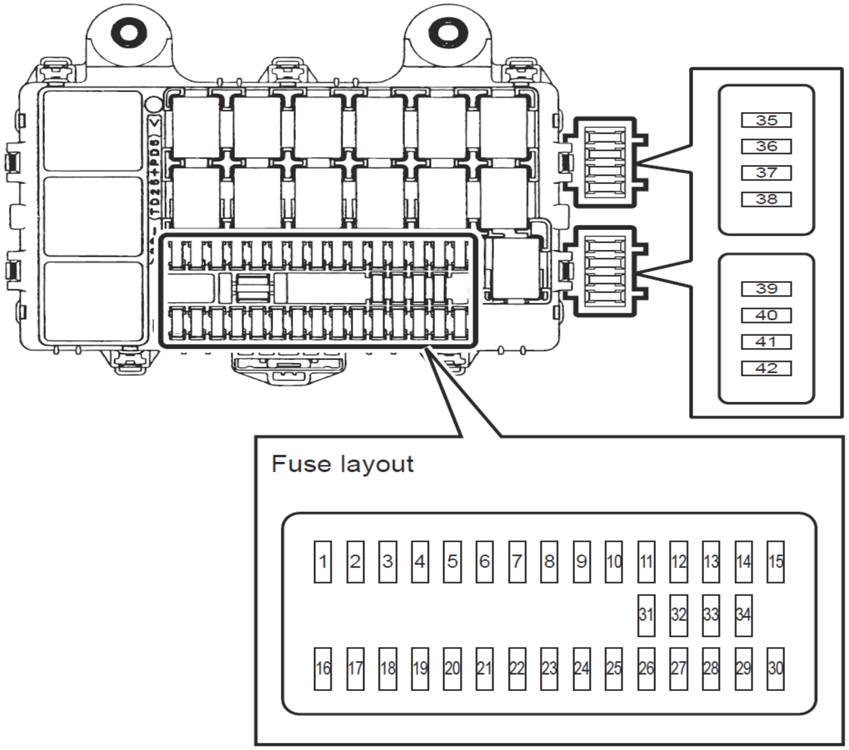

35
36
37
38
39
40
41
42
Fuse layout
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
31 32 33 34
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Figure 8

No.	Description	Rating
1	—	25A
2	SPARE	5A
3	ROOM LAMP, AUDIO	10A
4	DOOR LOCK	15A
5	—	15A
6	P/ WINDOW	25A
7	ABS	10A
8	WIPER	25A
9	H / LAMP LO (LH)	10A
10	LAMPS (BATT)	10A
11	H / LAMP LO (RH)	10A
12	BRAKE LAMPS	10A
13	STARTER	10A
14	H / LAMP HI (LH)	10A
15	H / LAMP HI (RH)	10A

No.	Description	Rating
16	MIRROR HEATER	15A
17	IGNITION2	10A
18	IGNITION1	10A
19	—	—
20	ECM	5A
21	METER	10A
22	ECU (BATT)	5A
23	MIRROR	10A
24	ACC	15A
25	HORN	15A
26	TURN, HAZARD	15A
27	TAIL LAMPS	10A
28	ILLUMINATIONS	10A
29	CORNERING LAMPS	10A
30	AIR CONDITIONER	10A

No.	Description	Rating
31	SPARE	—
32	SPARE	—
33	SPARE	—
34	SPARE	—
35	CIGAR	20A
36	ACCESSORIES SOCKET	15A

No.	Description	Rating
37	POWER SOURCE	20A
38	REVERSE LAMPS	10A
39	MIRROR HEATER DR	20A
40	SERVICE, REVERSE	10A
41	AUDIO, REVERSE	10A
42	MIRROR HEATER AS	20A

Figure 9

Relay Location (interior)

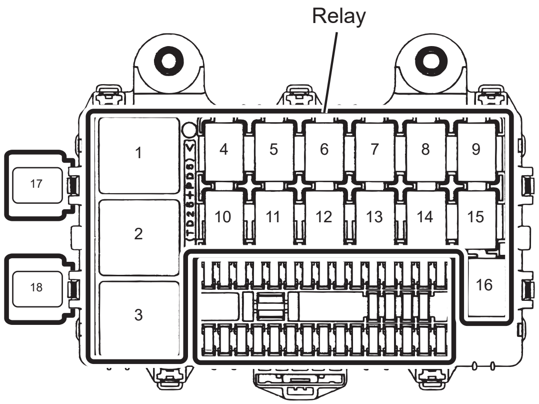

Relay
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Figure 10

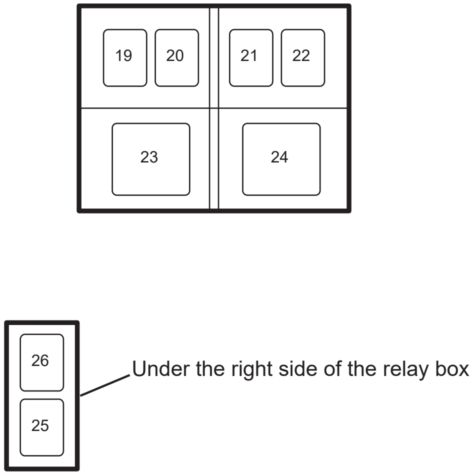

19
20
21
22
23
24
26
25
Under the right side of the relay box

Figure 11

No.	Description
1	BRAKE LAMP
2	DAYTIME RUNNING LAMP
3	KEY ON
4	DAYTIME RUNNING LAMP CUT
5	CORNERING LAMP
6	WIPER MAIN
7	HORN
8	WIPER HI LO
9	BLANK
10	BLANK
11	DOOR SWITCH (ALLISON2500RDS MODEL ONLY)
12	POWER WINDOW
13	HEAD LAMP LO
14	AIR DUMP (AIR SUSPENSION VEHICLE)
15	HEAD LAMP HI
16	TAIL LAMP
17	POWER ACC
18	BLOWER MOTOR
19	BRAKE LAMP SWITCH
20	CONDENSER FAN
21	REVERSE LAMP
22	CIGAR LIGHTER
23	MIRROR HEATER AS
24	MIRROR HEATER DR
25	COOLANT LEVEL SWITCH
26	BLANK

Figure 12

Relay and Fuse Locations (exterior)

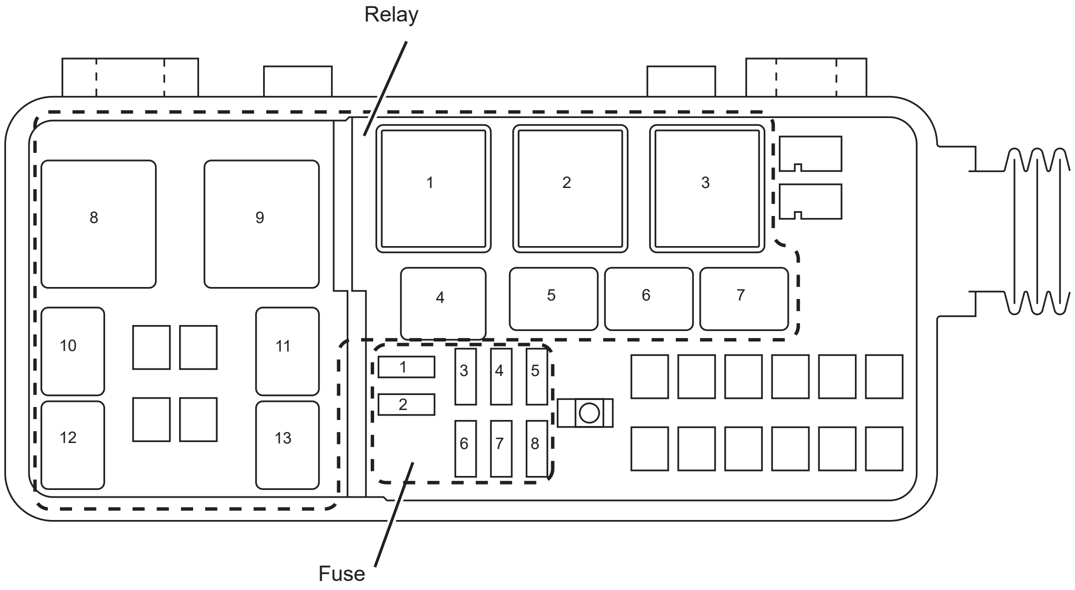


Figure 13

No.	Relay name
1	STARTER
2	TAIL LIGHT
3	NOx & DEF SENSOR
4	A/C COMPRESSOR
5	STARTER CUTOFF
6	RR DOME LIGHT
7	DEF PUMP
8	LINE HEATER3
9	NEUTRAL SAFETY GEAR
10	MARKER LIGHT
11	LINE HEATER1
12	LINE HEATER2
13	FUEL HEATER

No.	Fuse name	Rating
1	MARKER LIGHT	20A
2	TAIL MAIN	20A
3	ECM MAIN	10A
4	SCR	15A
5	TCM	15A
6	POWER SOURCE	15A
7	CONDENSER FAN	20A
8	A/C	10A

Figure 14

Ground Point Location

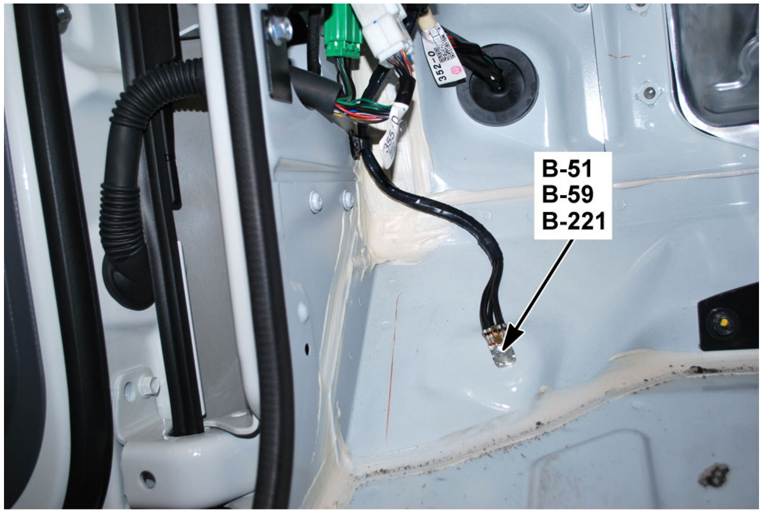


Figure 15

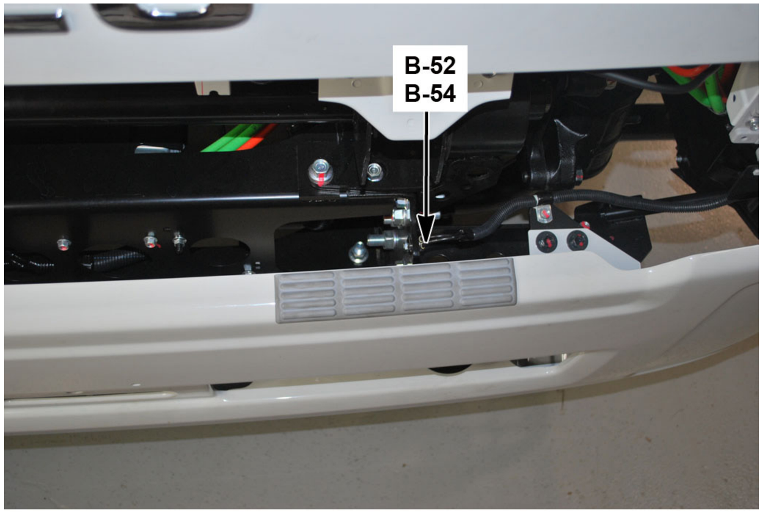


Figure 16

Note:
Abnormal phenomena of electrical components are often the result of a defective ground connection.
During electrical troubleshooting and repairs, be sure to inspect grounding points and associated fasteners.

Ground Point Location

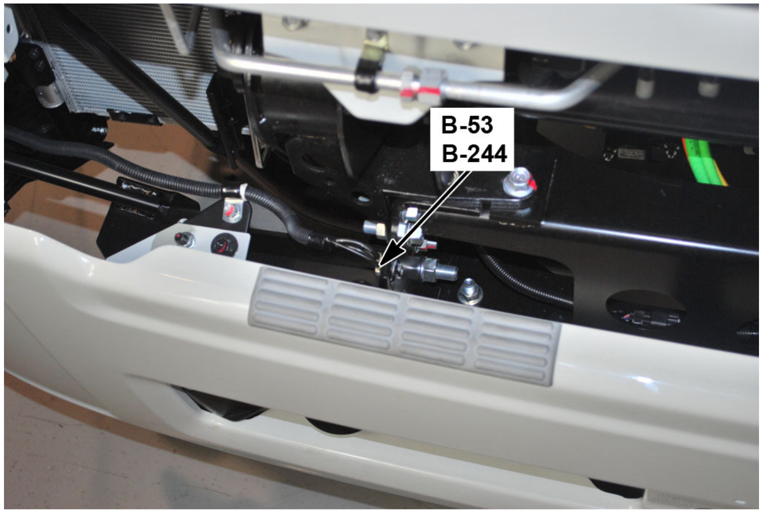


Figure 17

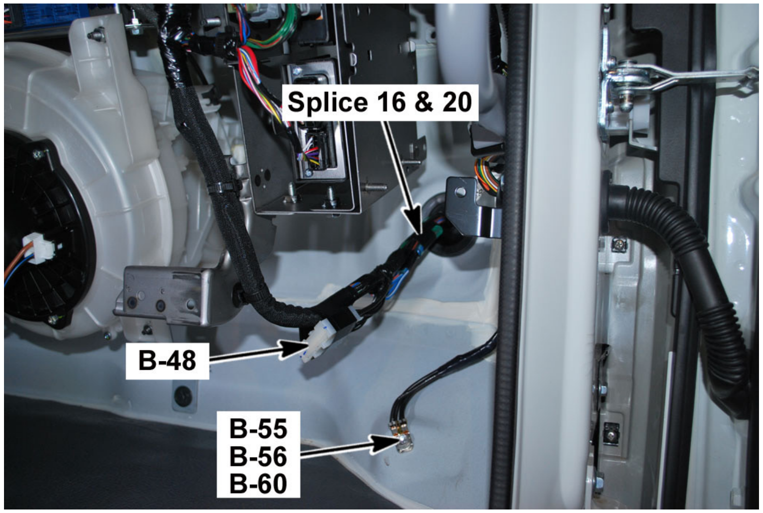

Splice 16 & 20
B-48
B-55
B-56
B-60

Figure 18

Note:
Abnormal phenomena of electrical components are often the result of a defective ground connection.
During electrical troubleshooting and repairs, be sure to inspect grounding points and associated fasteners.

Ground Point Location

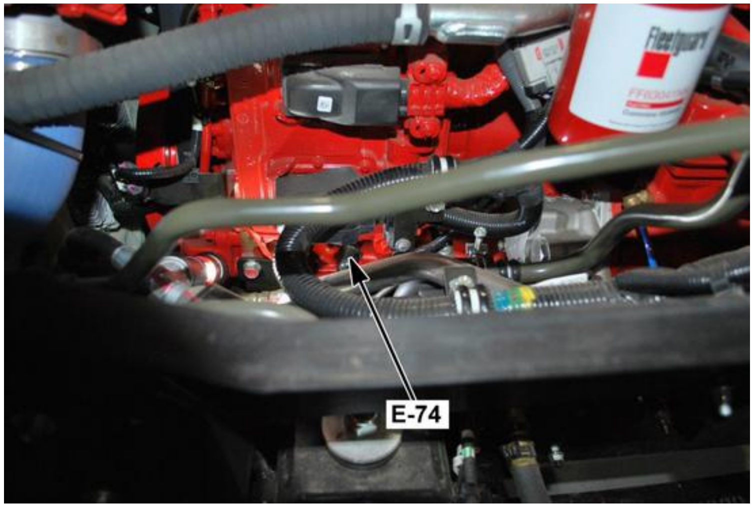


Figure 19

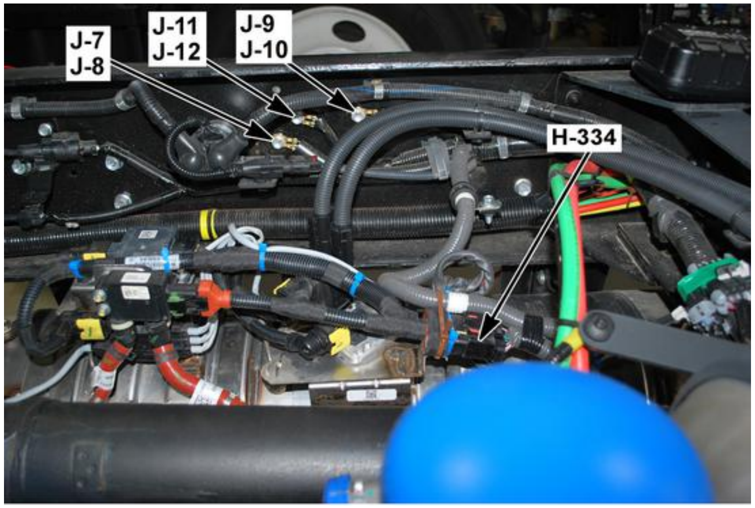


Figure 20

Note:
Abnormal phenomena of electrical components are often the result of a defective ground connection.
During electrical troubleshooting and repairs, be sure to inspect grounding points and associated fasteners.

Ground Point Location

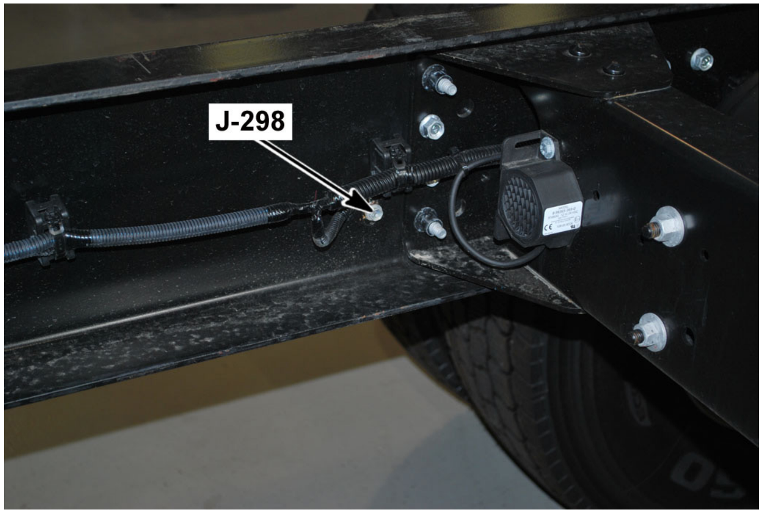


Figure 21

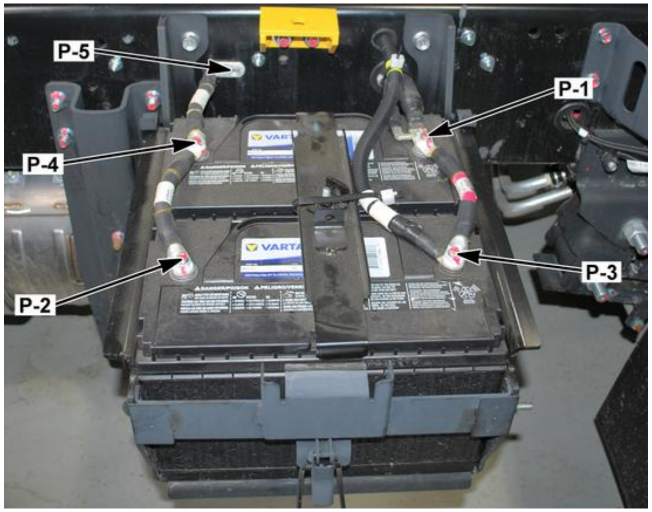


Figure 22

Note:
Abnormal phenomena of electrical components are often the result of a defective ground connection.
During electrical troubleshooting and repairs, be sure to inspect grounding points and associated fasteners.

Ground Point Location

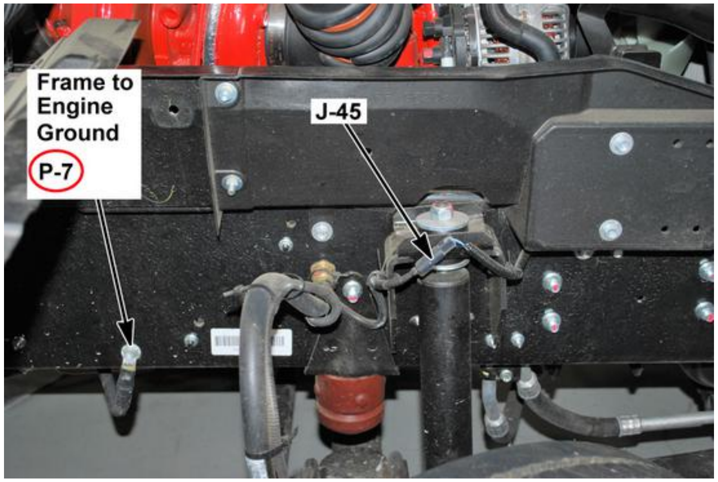

Frame to
Engine
Ground
P-7
J-45

Figure 23

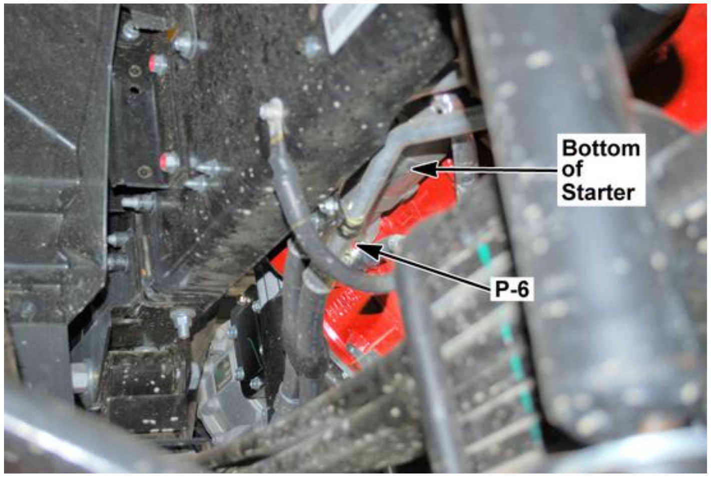
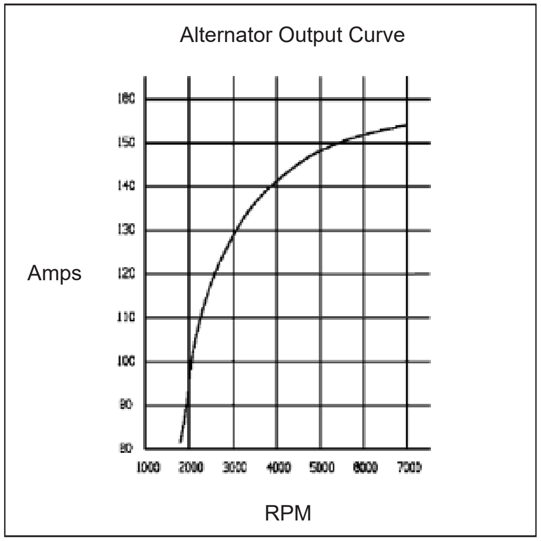

Bottom
of
Starter
P-6

Figure 24

Note:
Abnormal phenomena of electrical components are often the result of a defective ground connection.
During electrical troubleshooting and repairs, be sure to inspect grounding points and associated fasteners.

Alternator and Battery Information

6500 XD Diesel Engine
2.662 : 1 alternator pulley to crankshaft pulley



Battery	VARTA GR31
Cold Crank Capacity	750 AMP
Reserve Capacity (25 AMPS)	180 Minutes
Alternator	12V-160AMP

Figure 25

Battery

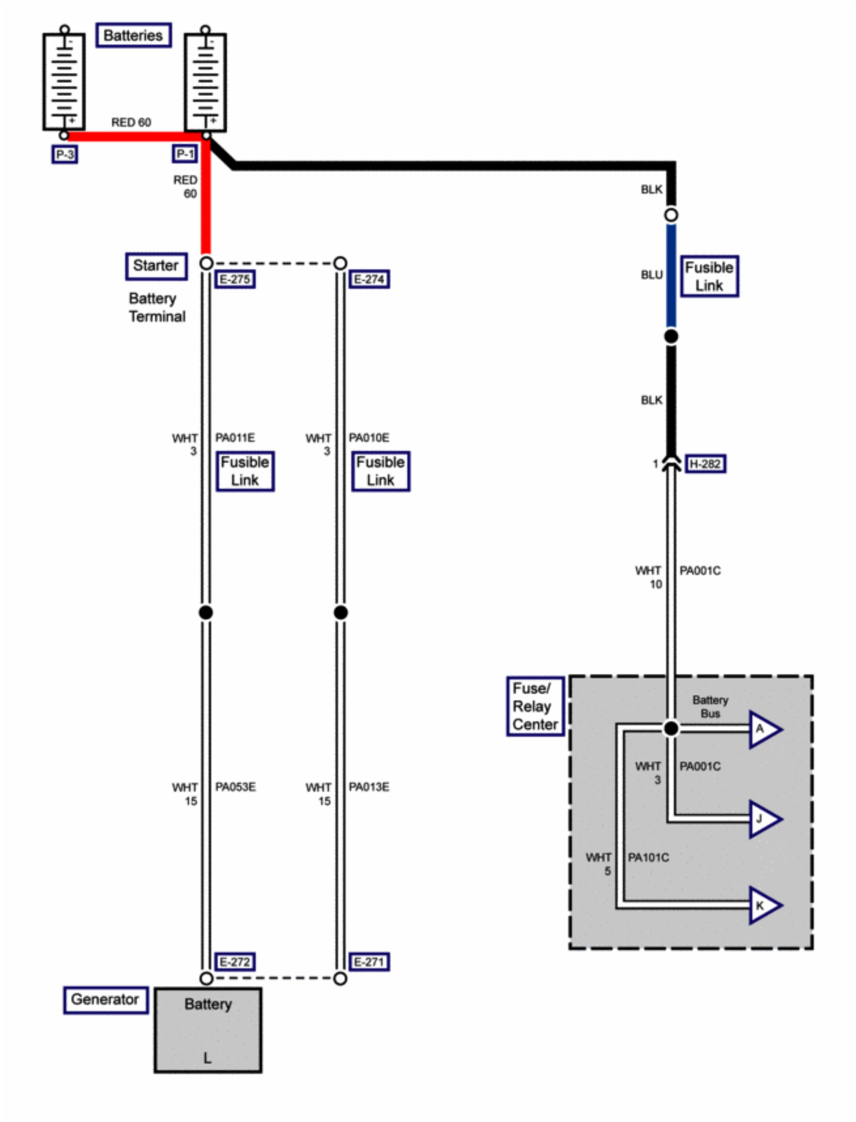
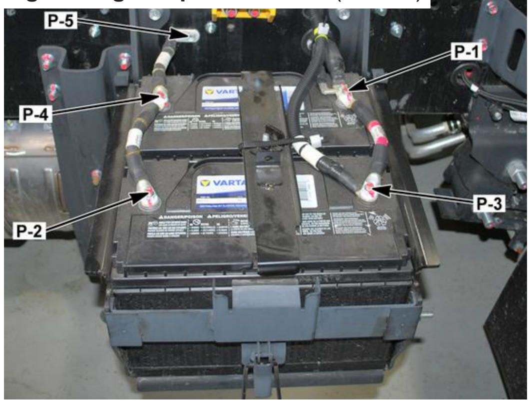

Batteries
RED 60
P-3
P-1
RED 60
BLK
Starter
Battery Terminal
E-275
E-274
BLU
Fusible Link
BLK
WHT 3
PA011E
Fusible Link
WHT 3
PA010E
Fusible Link
1
H-282
WHT 10
PA001C
Fuse/ Relay Center
Battery Bus
A
WHT 3
PA001C
J
WHT 5
PA101C
K
WHT 15
PA053E
WHT 15
PA013E
E-272
E-271
Generator
Battery
L

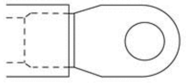
Figure 26

Tightening Torques: 15 N-m (11 lb-ft)


P-5
P-1
P-4
P-3
P-2

P-1, P-2, P-3, P-4 Battery Terminals Connector End View

- **1 Way Eyelet**



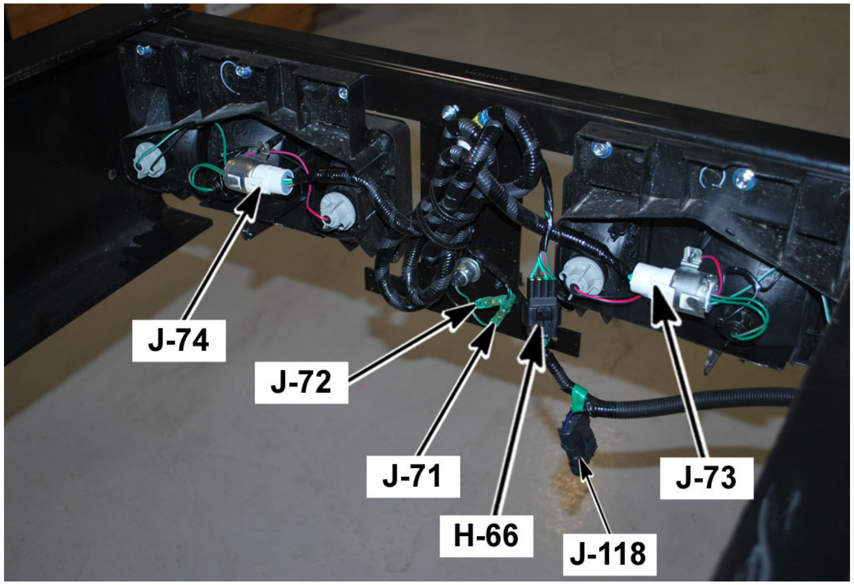
Connector Part Information

Pin	Wire Color	Circuit Number	Function
P-1	BLK RED RED	—	Battery Voltage to H-282 pin 1 Battery Positive To Positive Battery Battery To Starter Positive
P-2	BLK	—	Battery Negative To Battery Negative
P-3	RED	—	Battery Positive To Battery Positive
P-4	BLK BLK/YEL	—	Battery Negative To Battery Negative Battery To Ground P-5

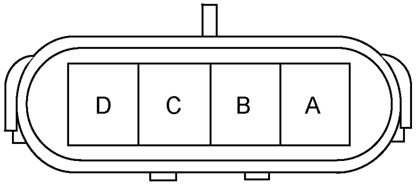
Figure 27

Rear Manufacturer Lighting Connector J-118

J-118 Rear Manufacturer Connector


J-74
J-72
J-71
H-66
J-118
J-73

At the Rear of the Frame, Near the Rear Combination Lamps



Connector End View

PIN	Wire Color	Circuit Number	Function
A	LT GRN/BLK	BA048D	Switched Output Voltage from Marker Lamp Relay
B	RED	IA027D	Battery Voltage from Fuse F36
C	WHT/BLK	IA028D	Switched Output Voltage from Rear Dome Lamp
D	BLK/BLU	IX013D	Ground to J-298
Rear Manufacturer Connector P/N's			
	Part Number		Description
Chassis Side Connector	12010974 (Delphi)		4-Way M (BLU)
Upfitter Installed Connector	12015787 (Delphi)		4-Way F

Figure 28

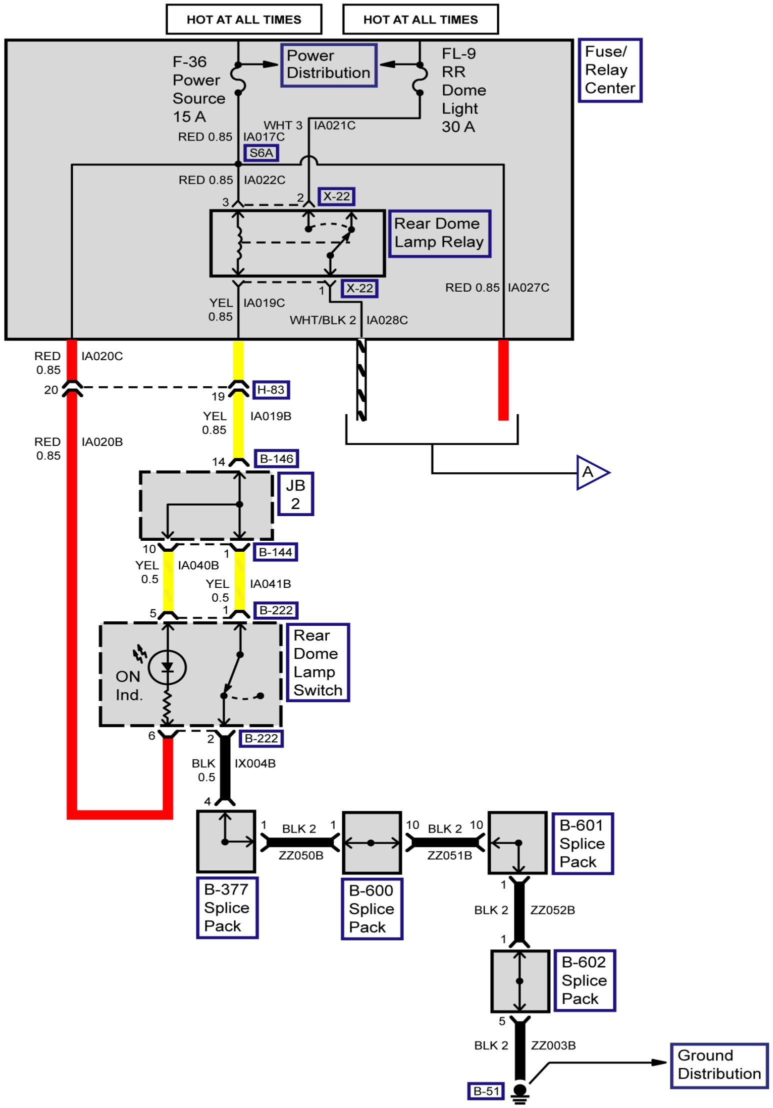
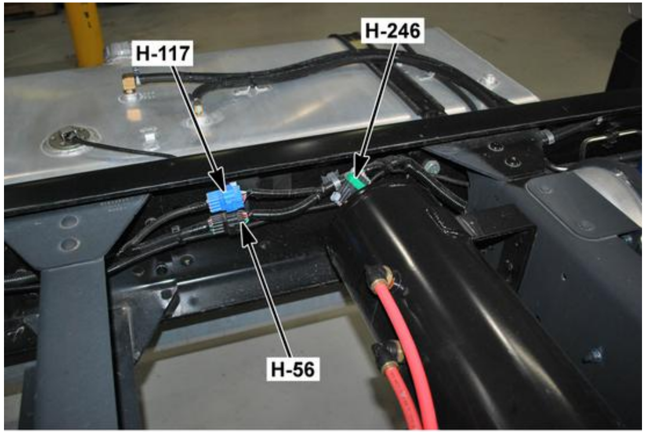

HOT AT ALL TIMES
HOT AT ALL TIMES
F-36 Power Source 15 A
Power Distribution
FL-9 RR Dome Light 30 A
Fuse/ Relay Center
WHT 3
IA021C
RED 0.85
IA017C
S6A
RED 0.85
IA022C
3
2
X-22
Rear Dome Lamp Relay
1
X-22
YEL 0.85
IA019C
WHT/BLK 2
IA028C
RED 0.85
IA027C
RED 0.85
IA020C
20
19
H-83
YEL 0.85
IA019B
RED 0.85
IA020B
14
B-146
JB 2
10
1
B-144
YEL 0.5
IA040B
YEL 0.5
IA041B
5
1
B-222
ON Ind.
Rear Dome Lamp Switch
6
2
B-222
BLK 0.5
IX004B
4
A
1
BLK 2
1
ZZ050B
10
BLK 2
10
ZZ051B
B-377 Splice Pack
B-600 Splice Pack
B-601 Splice Pack
1
BLK 2
ZZ052B
1
B-602 Splice Pack
5
BLK 2
ZZ003B
B-51
Ground Distribution

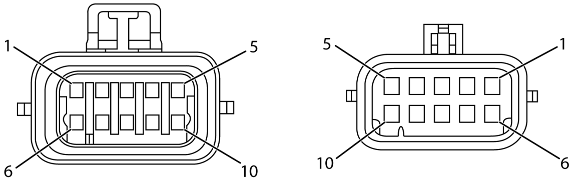
Figure 29

Body Builders Connector H-246

H-246 Body Builder Connector


H-117
H-246
H-56

Left Inner Frame Rail, Next to the Fuel Tank


1
5
6
10
5
1
10
6

Connector End View

PIN	Wire Color	Circuit Number	Function	PIN	Wire Color	Circuit Number	Function
1	BRN	OA044C	Range Inhibitor Switch to TCM	1	—	—	—
2	—	—	Not Used	2	—	—	—
3	BLK	OA045C	Analog Sensor Signal Return to TCM	3	—	—	—
4	BLK	OA046C	Digital Return to TCM	4	—	—	—
5	LT BLU	OA047C	PTO Output to TCM	5	—	—	—
6	—	—	Not Used	6-7	—	—	—
7	—	—	Not Used	8	—	—	—
8	WHT	OA051C	PTO Switch to TCM and H-104 PTO Connector	6-7	—	—	—
9	PNK	OA041C	Auto Neutral to TCM	8	—	—	—
10	YEL	OA040C	Range Indicator to TCM	8	—	—	—

Back Up Alarm Connector P/N's

	Part Number	Description		Part Number	Description
Chassis Side Connector	12177081 (Delphi)	10-Way F (BLK)	Upfitter Installed Connector	12045808 (Delphi)	10-Way M

Figure 30

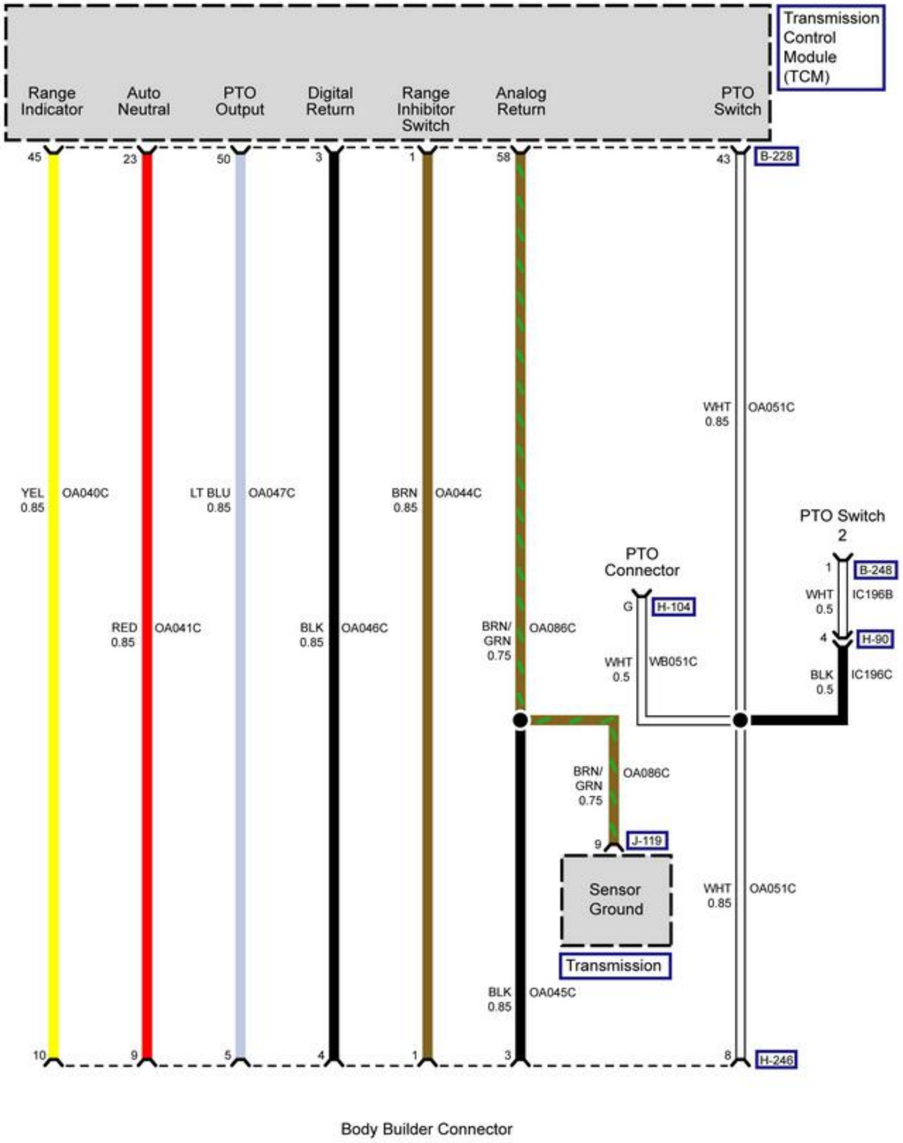
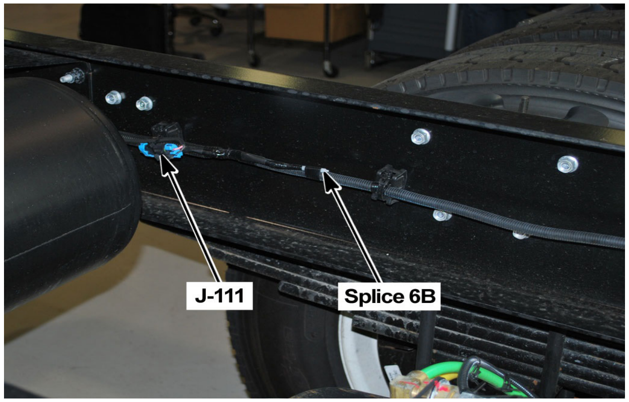

Transmission Control Module (TCM)
Range Indicator
Auto Neutral
PTO Output
Digital Return
Range Inhibitor Switch
Analog Return
PTO Switch
45
23
50
3
1
58
43
B-228
YEL 0.85
OA040C
RED 0.85
OA041C
LT BLU 0.85
OA047C
BLK 0.85
OA046C
BRN 0.85
OA044C
BRN/ GRN 0.75
OA086C
WHT 0.85
OA051C
PTO Connector
G
H-104
WHT 0.5
WB051C
PTO Switch 2
1
B-248
WHT 0.5
IC196B
4
H-90
BLK 0.5
IC196C
BRN/ GRN 0.75
OA086C
9
J-119
Sensor Ground
Transmission
BLK 0.85
OA045C
WHT 0.85
OA051C
10
9
5
4
1
3
8
H-246
Body Builder Connector

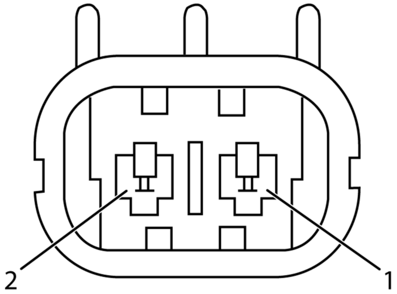
Figure 31

Back Up Lamp and Alarm Circuit J-111

J-111 Backup Alarm


J-111
Splice 6B

Left Rear Frame Rail, Behind the Rear Axle



Connector End View

PIN	Wire Color	Circuit Number	Function
1	RED/BLU	KA023D	Voltage from Fuse A-4 (In Reverse) from Fuse/Relay Center (Cab) (B-250 pin 8)
2	BLK/BLU	KX001D	Ground to Splice 5 (J-9 and J-7 Ground)

Back Up Alarm Connector P/N's

	Part Number	Description
Chassis Side Connector	15300002 (Delphi)	2-Way M (BLK)

Figure 32

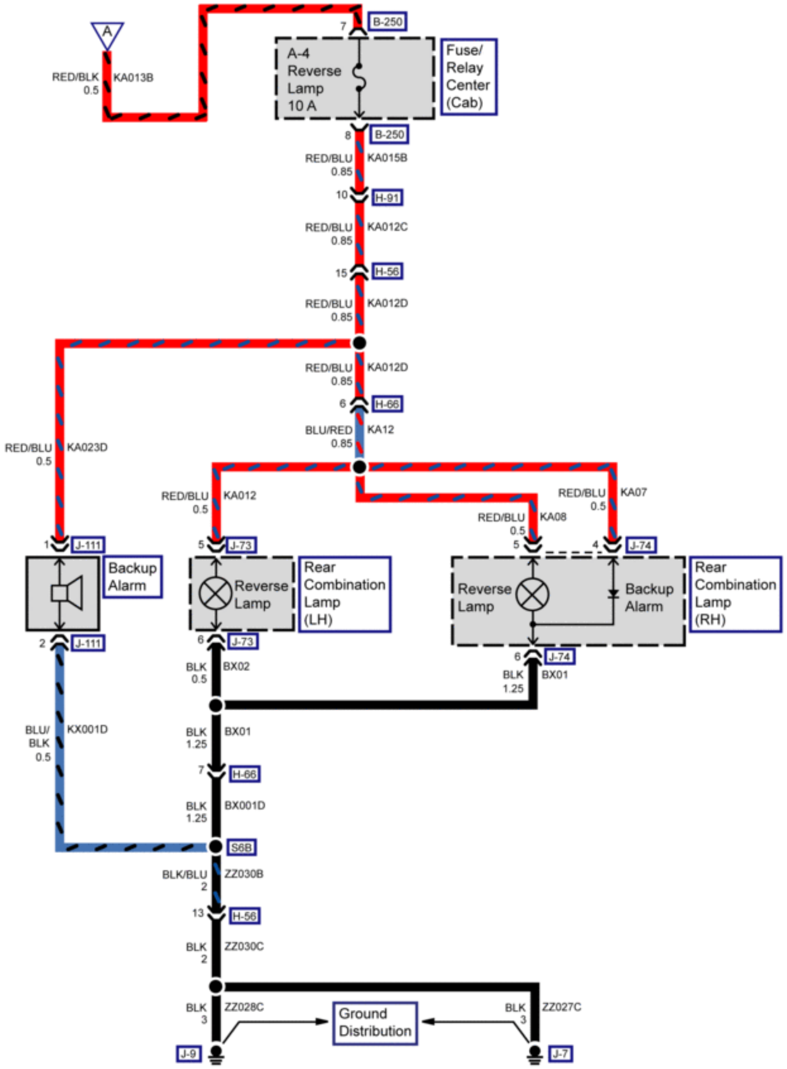
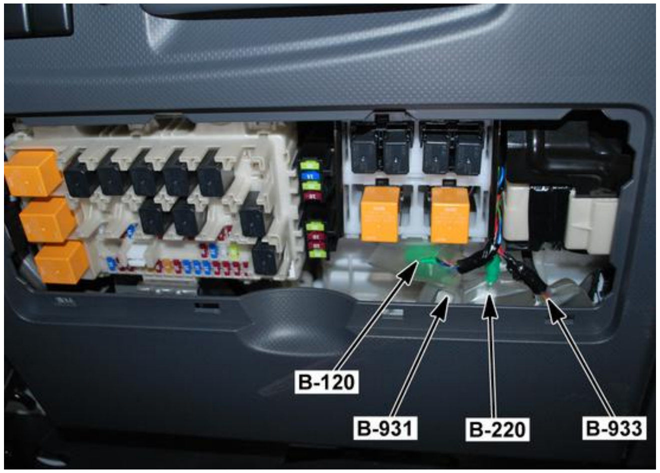

A
RED/BLK 0.5
KA013B
7
B-250
A-4 Reverse Lamp 10 A
Fuse/ Relay Center (Cab)
8
B-250
RED/BLU 0.85
KA015B
10
H-91
RED/BLU 0.85
KA012C
15
H-56
RED/BLU 0.85
KA012D
RED/BLU 0.85
KA012D
6
H-66
BLU/RED 0.85
KA12
RED/BLU 0.5
KA023D
RED/BLU 0.5
KA012
RED/BLU 0.5
KA08
RED/BLU 0.5
KA07
1
J-111
5
J-73
5
4
J-74
Backup Alarm
Reverse Lamp
Rear Combination Lamp (LH)
Reverse Lamp
Backup Alarm
Rear Combination Lamp (RH)
2
J-111
6
J-73
6
J-74
BLK 0.5
BX02
BLK 1.25
BX01
BLU/ BLK 0.5
KX001D
BLK 1.25
BX01
7
H-66
BLK 1.25
BX001D
S6B
BLK/BLU 2
ZZ030B
13
H-56
BLK 2
ZZ030C
BLK 3
ZZ028C
Ground Distribution
BLK 3
ZZ027C
J-9
J-7

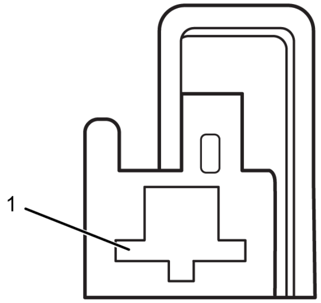
Figure 33

Power Source Connector B-220 and Lower Power Outlet

B-220 Power Source


B-120
B-931
B-220
B-933

Center of the Instrument Panel, Right Side of the Fuse/Relay Center (Cab)



Connector End View

PIN	Wire Color	Circuit Number	Function
1	GRN/ORN	SA002B	Ignition Voltage from Fuse A-3
Connector Part Information			
	Part Number		Description
Chassis Side Connector	7323-6317 (Yazaki)		1-Way F (WHT)

Figure 34

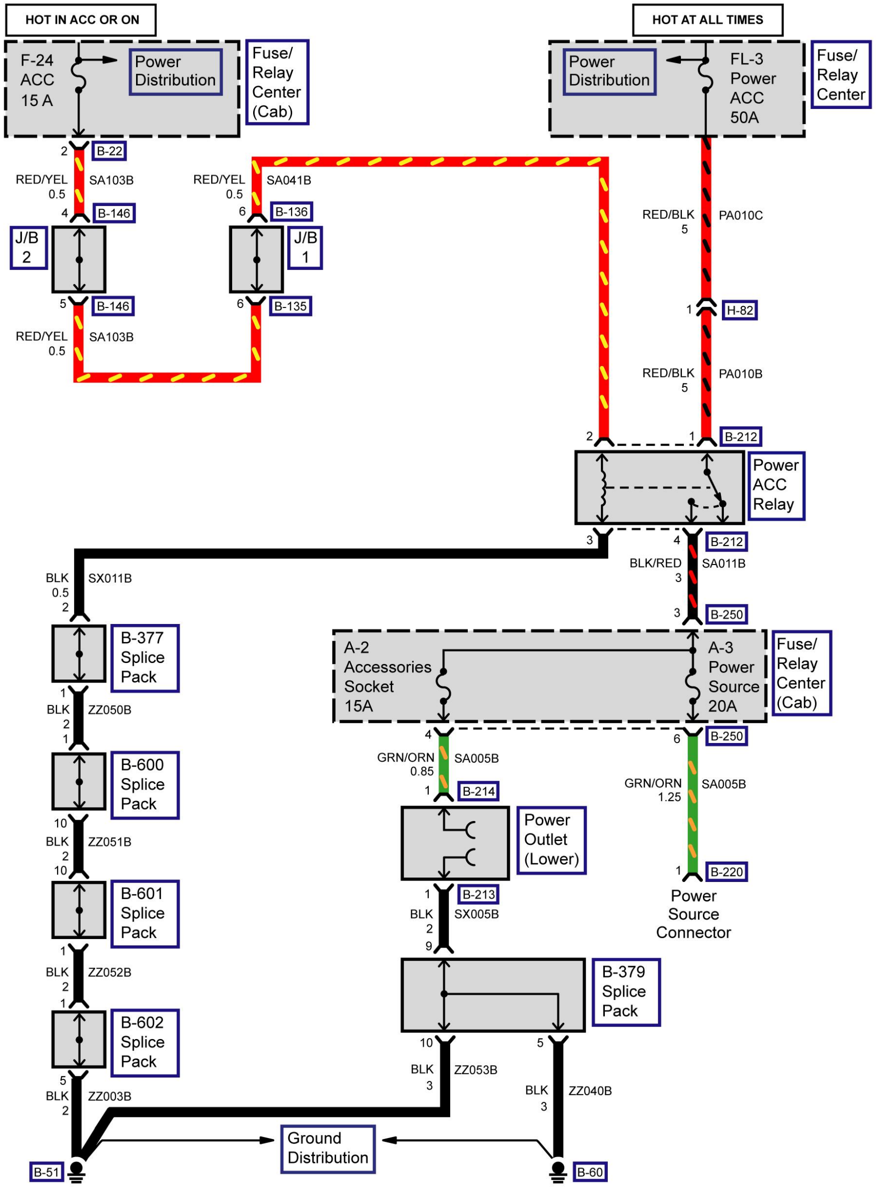

HOT IN ACC OR ON
F-24 ACC 15 A
Power Distribution
Fuse/ Relay Center (Cab)
HOT AT ALL TIMES
Power Distribution
FL-3 Power ACC 50A
Fuse/ Relay Center
2 B-22
RED/YEL 0.5
SA103B
4 B-146
J/B 2
5 B-146
RED/YEL 0.5
SA103B
RED/YEL 0.5
SA041B
6 B-136
J/B 1
6 B-135
RED/BLK 5
PA010C
1 H-82
RED/BLK 5
PA010B
2
1 B-212
Power ACC Relay
3
4 B-212
BLK/RED 3
SA011B
3 B-250
BLK 0.5 2
SX011B
B-377 Splice Pack
1
BLK 2
ZZ050B
1
B-600 Splice Pack
10
BLK 2
ZZ051B
10
B-601 Splice Pack
1
BLK 2
ZZ052B
1
B-602 Splice Pack
5
BLK 2
ZZ003B
B-51
Ground Distribution
A-2 Accessories Socket 15A
A-3 Power Source 20A
Fuse/ Relay Center (Cab)
4
GRN/ORN 0.85
SA005B
1 B-214
Power Outlet (Lower)
1 B-213
BLK 2
SX005B
9
B-379 Splice Pack
10
BLK 3
ZZ053B
5
BLK 3
ZZ040B
B-60
6 B-250
GRN/ORN 1.25
SA005B
1 B-220
Power Source Connector

Figure 35

Upper Power Outlet

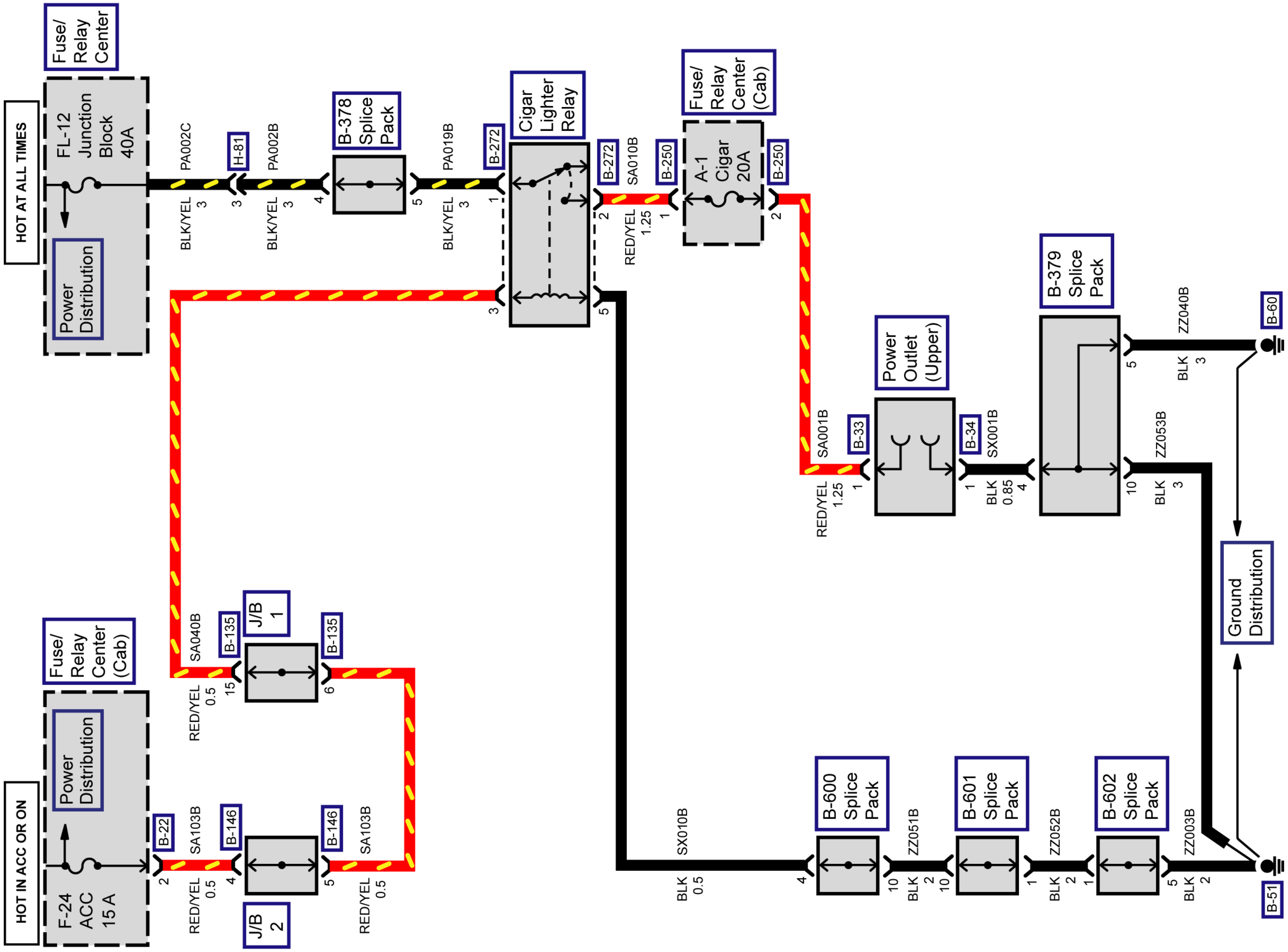

HOT AT ALL TIMES
Fuse/ Relay Center
FL-12 Junction Block 40A
Power Distribution
PA002C
BLK/YEL 3
H-81
3
PA002B
BLK/YEL 3
4
B-378 Splice Pack
5
PA019B
BLK/YEL 3
B-272
1
Cigar Lighter Relay
3
B-272
2
SA010B
RED/YEL 1.25
B-250
1
Fuse/ Relay Center (Cab)
A-1 Cigar 20A
B-250
2
5
B-379 Splice Pack
ZZ040B
5
BLK 3
B-60
Power Outlet (Upper)
SA001B
B-33
1
RED/YEL 1.25
B-34
SX001B
1
BLK 0.85
4
ZZ053B
10
BLK 3
Ground Distribution
SA040B
B-135
J/B 1
B-135
RED/YEL 0.5
15
6
Fuse/ Relay Center (Cab)
Power Distribution
HOT IN ACC OR ON
F-24 ACC 15 A
B-22
2
SA103B
RED/YEL 0.5
B-146
4
J/B 2
B-146
5
SA103B
RED/YEL 0.5
SX010B
BLK 0.5
4
B-600 Splice Pack
ZZ051B
10
BLK 2
10
B-601 Splice Pack
ZZ052B
1
BLK 2
1
B-602 Splice Pack
ZZ003B
5
BLK 2
B-51

Figure 36

Headlights Low Beam

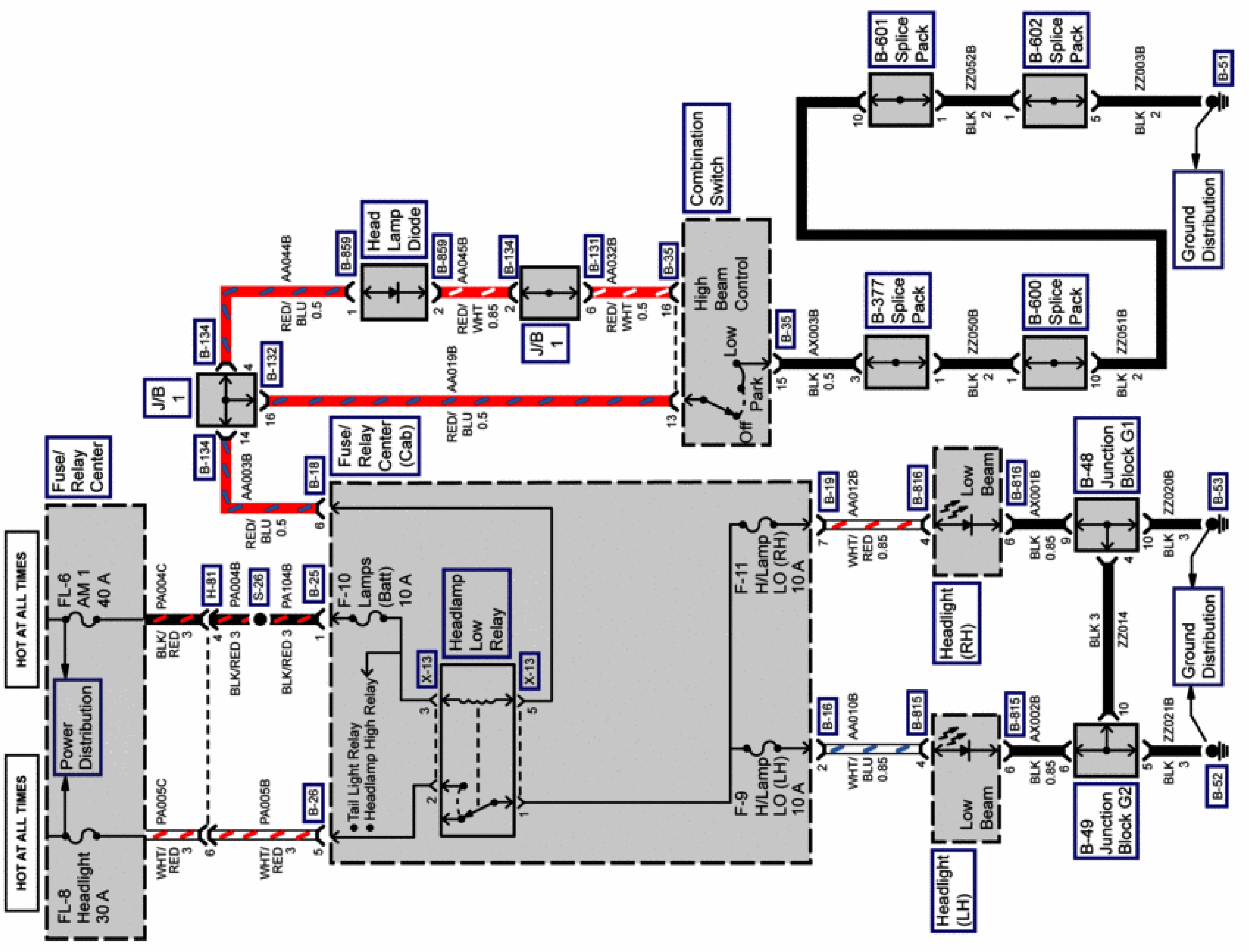

HOT AT ALL TIMES
HOT AT ALL TIMES
Fuse/ Relay Center
FL-6 AM 1 40 A
Power Distribution
FL-8 Headlight 30 A
PA004C
BLK/ RED 3
H-81
PA004B
BLK/RED 3
S-26
PA104B
BLK/RED 3
B-25
PA005C
WHT/ RED 3
PA005B
WHT/ RED 3
B-26
Fuse/ Relay Center (Cab)
F-10 Lamps (Batt) 10 A
Headlamp Low Relay
X-13
X-13
• Tail Light Relay
• Headlamp High Relay
F-11 H/Lamp LO (RH) 10 A
F-9 H/Lamp LO (LH) 10 A
B-18
RED/ BLU 0.5
AA003B
B-134
J/B 1
B-134
B-132
B-859
AA044B
RED/ BLU 0.5
Head Lamp Diode
B-859
AA045B
RED/ WHT 0.85
B-134
J/B 1
B-131
AA032B
RED/ WHT 0.5
B-35
AA019B
RED/ BLU 0.5
Combination Switch
High Beam Control
Low
Park
Off
B-35
AX003B
BLK 0.5
B-377 Splice Pack
ZZ050B
BLK 2
B-600 Splice Pack
ZZ051B
BLK 2
B-601 Splice Pack
ZZ052B
BLK 2
B-602 Splice Pack
ZZ003B
BLK 2
B-51
Ground Distribution
B-19
AA012B
WHT/ RED 0.85
B-816
Low Beam
Headlight (RH)
B-816
AX001B
BLK 0.85
B-48 Junction Block G1
ZZ020B
BLK 3
B-53
Ground Distribution
BLK 3
ZZ014
B-16
AA010B
WHT/ BLU 0.85
B-815
Low Beam
Headlight (LH)
B-815
AX002B
BLK 0.85
B-49 Junction Block G2
ZZ021B
BLK 3
B-52

Figure 37

2026 Chevrolet Low Cab Forward

Headlights High Beam

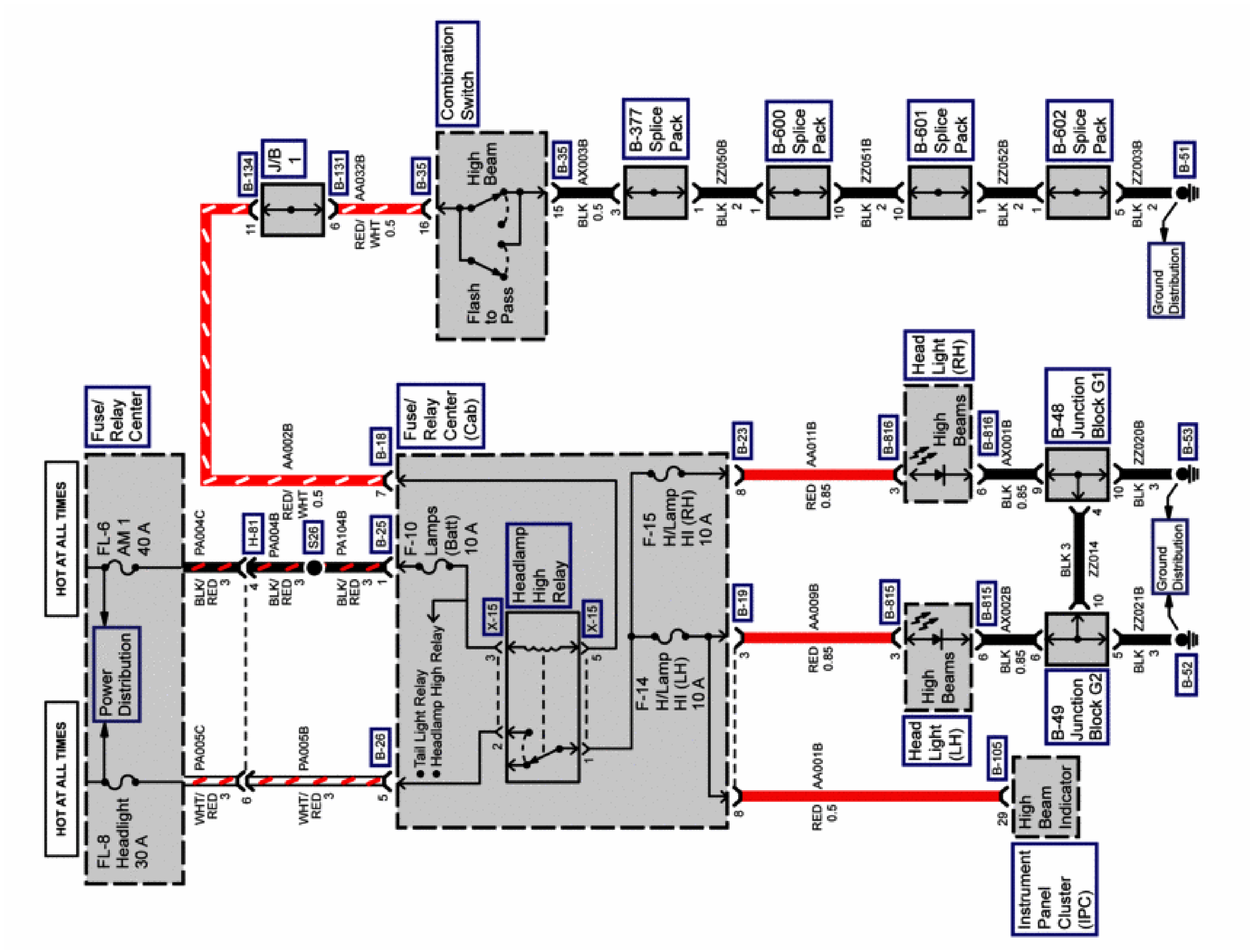

HOT AT ALL TIMES
HOT AT ALL TIMES
Fuse/ Relay Center
FL-6 AM 1 40 A
Power Distribution
FL-8 Headlight 30 A
PA004C
BLK/ RED 3
PA005C
WHT/ RED 3
H-81
4
6
PA004B
BLK/ RED 3
S26
PA104B
BLK/ RED 3
PA005B
WHT/ RED 3
AA002B
RED/ WHT 0.5
B-134
11
J/B 1
B-131
6
AA032B
RED/ WHT 0.5
B-35
16
Combination Switch
High Beam
Flash to Pass
B-35
15
AX003B
BLK 0.5
3
B-377 Splice Pack
ZZ050B
BLK 2
1
B-600 Splice Pack
ZZ051B
BLK 2
10
B-601 Splice Pack
ZZ052B
BLK 2
1
B-602 Splice Pack
ZZ003B
BLK 2
5
B-51
Ground Distribution
B-18
7
B-25
1
B-26
5
Fuse/ Relay Center (Cab)
F-10 Lamps (Batt) 10 A
• Tail Light Relay
• Headlamp High Relay
Headlamp High Relay
X-15
3
2
X-15
5
1
F-15 H/Lamp HI (RH) 10 A
F-14 H/Lamp HI (LH) 10 A
B-23
8
AA011B
RED 0.85
B-19
3
AA009B
RED 0.85
8
AA001B
RED 0.5
B-816
3
High Beams
Head Light (RH)
B-816
6
AX001B
BLK 0.85
9
B-815
3
High Beams
Head Light (LH)
B-815
6
AX002B
BLK 0.85
6
B-48 Junction Block G1
B-49 Junction Block G2
4
BLK 3
ZZ014
10
ZZ020B
BLK 3
10
ZZ021B
BLK 3
5
B-53
B-52
Ground Distribution
B-105
29
High Beam Indicator
Instrument Panel Cluster (IPC)

Figure 38

Taillamps and License Plate Lamps

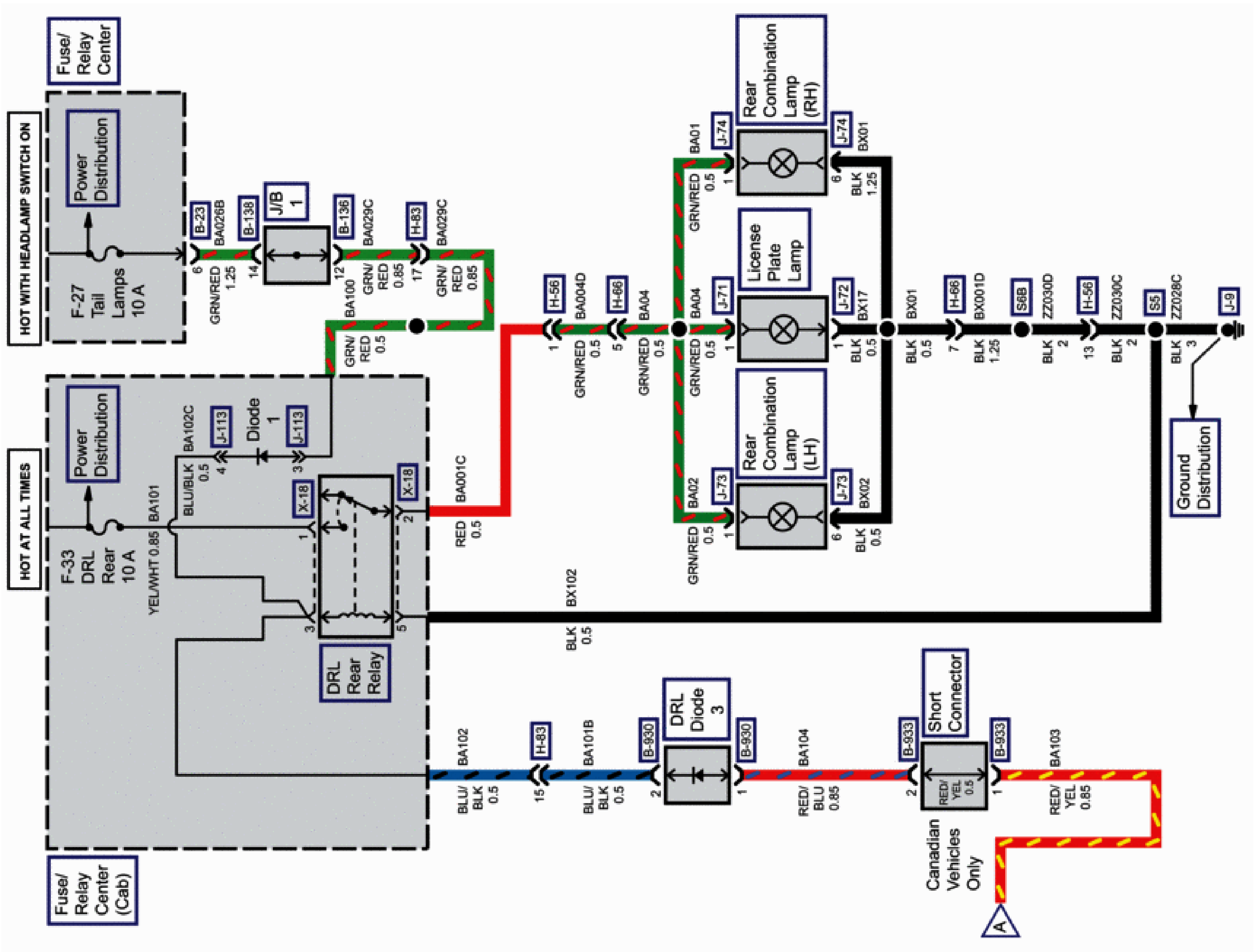

Fuse/ Relay Center
HOT WITH HEADLAMP SWITCH ON
Power Distribution
F-27 Tail Lamps 10 A
B-23
BA026B
6
GRN/RED 1.25
B-138
14
J/B 1
B-136
BA029C
12
BA100
GRN/ RED 0.85
H-83
BA029C
17
GRN/ RED 0.85
GRN/ RED 0.5
HOT AT ALL TIMES
Power Distribution
F-33 DRL Rear 10 A
YEL/WHT 0.85 BA101
BLU/BLK 0.5
BA102C
J-113
4
Diode 1
J-113
3
X-18
1
X-18
2
3
5
DRL Rear Relay
BA001C
RED 0.5
H-56
BA004D
1
GRN/RED 0.5
H-66
BA04
5
GRN/RED 0.5
BA01
J-74
GRN/RED 0.5
1
Rear Combination Lamp (RH)
J-74
BX01
6
BLK 1.25
License Plate Lamp
BA04
J-71
GRN/RED 0.5
1
J-72
BX17
1
BLK 0.5
BX01
BLK 0.5
H-66
BX001D
7
BLK 1.25
S6B
ZZ030D
BLK 2
H-56
ZZ030C
13
BLK 2
S5
ZZ028C
BLK 3
J-9
Ground Distribution
Rear Combination Lamp (LH)
BA02
J-73
GRN/RED 0.5
1
J-73
BX02
6
BLK 0.5
BX102
BLK 0.5
BA102
BLU/ BLK 0.5
H-83
BA101B
15
BLU/ BLK 0.5
B-930
2
DRL Diode 3
B-930
1
BA104
RED/ BLU 0.85
B-933
2
Short Connector
RED/ YEL 0.5
B-933
1
BA103
RED/ YEL 0.85
Canadian Vehicles Only
A
Fuse/ Relay Center (Cab)

Figure 39

2026 Chevrolet Low Cab Forward

Roof Marker Lights

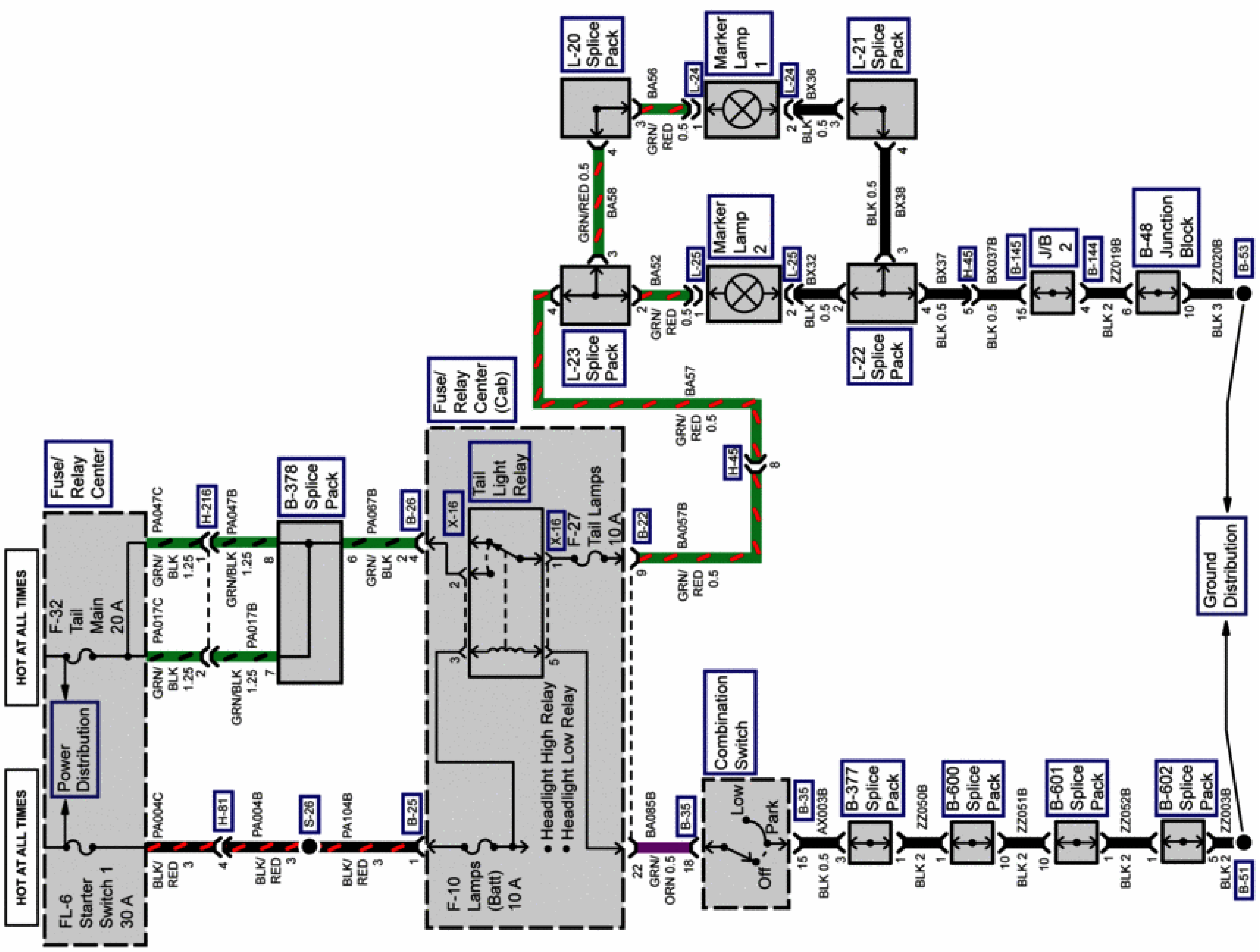

HOT AT ALL TIMES
HOT AT ALL TIMES
Fuse/ Relay Center
F-32 Tail Main 20 A
Power Distribution
FL-6 Starter Switch 1 30 A
PA047C
PA017C
PA004C
H-216
H-81
PA047B
PA017B
PA004B
S-26
PA104B
GRN/ BLK 1.25 1
GRN/ BLK 1.25 2
GRN/BLK 1.25 8
GRN/BLK 1.25 7
BLK/ RED 3
BLK/ RED 3
BLK/ RED 3
B-378 Splice Pack
PA067B
GRN/ BLK 2 6 4
B-26
B-25
Fuse/ Relay Center (Cab)
X-16
Tail Light Relay
X-16
F-27 Tail Lamps 10 A
Headlight High Relay
Headlight Low Relay
F-10 Lamps (Batt) 10 A
B-22
BA057B
GRN/ RED 0.5
9
H-45
8
BA57
GRN/ RED 0.5
BA085B
B-35
GRN/ ORN 0.5
22
18
Combination Switch
Low
Park
Off
B-35
AX003B
BLK 0.5
15
3
B-377 Splice Pack
ZZ050B
BLK 2
B-600 Splice Pack
ZZ051B
BLK 2
B-601 Splice Pack
ZZ052B
BLK 2
B-602 Splice Pack
ZZ003B
BLK 2
B-51
Ground Distribution
L-20 Splice Pack
BA56
L-24
Marker Lamp 1
L-24
BX36
L-21 Splice Pack
GRN/ RED 0.5
BLK 0.5
GRN/RED 0.5
BA58
BLK 0.5
BX38
L-23 Splice Pack
BA52
L-25
Marker Lamp 2
L-25
BX32
L-22 Splice Pack
BX37
H-45
BX037B
B-145
J/B 2
B-144
ZZ019B
B-48 Junction Block
ZZ020B
B-53
BLK 0.5
BLK 0.5
BLK 2
BLK 3

Figure 40

Roof Clearance Lights (AT)

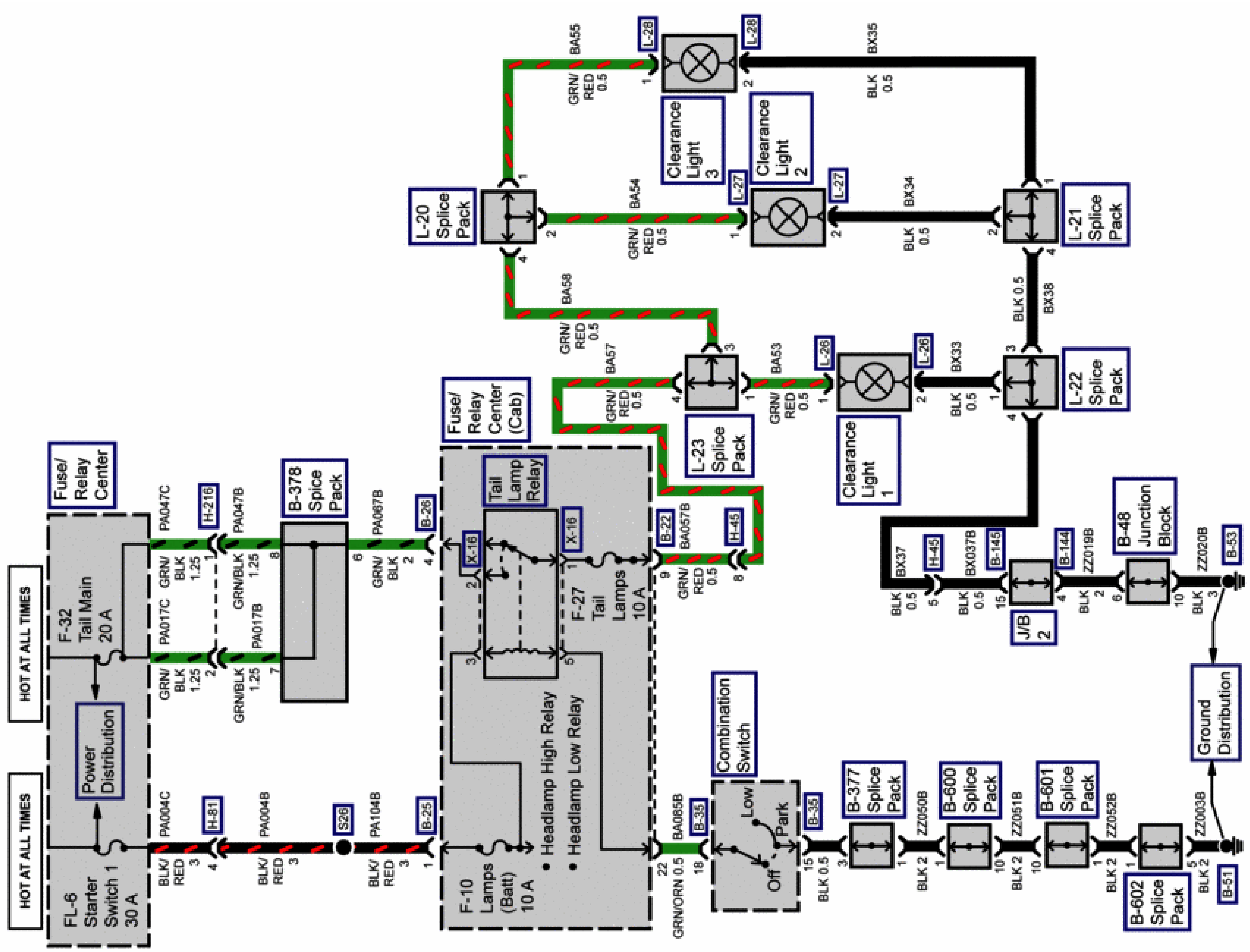

HOT AT ALL TIMES
HOT AT ALL TIMES
Fuse/ Relay Center
F-32 Tail Main 20 A
Power Distribution
FL-6 Starter Switch 1 30 A
PA047C
GRN/ BLK 1.25
PA017C
H-216
PA047B
GRN/BLK 1.25
PA017B
B-378 Spice Pack
PA067B
GRN/ BLK 2
PA004C
BLK/ RED 3
H-81
PA004B
BLK/ RED 3
S26
PA104B
B-25
B-26
Fuse/ Relay Center (Cab)
Tail Lamp Relay
X-16
F-27 Tail Lamps 10 A
F-10 Lamps (Batt) 10 A
• Headlamp High Relay
• Headlamp Low Relay
B-22
BA057B
GRN/ RED 0.5
H-45
BA085B
B-35
GRN/ORN 0.5
Combination Switch
Low
Park
Off
L-20 Splice Pack
L-21 Splice Pack
L-22 Splice Pack
L-23 Splice Pack
L-26
L-27
L-28
BA55
BA54
BA58
BA57
BA53
GRN/ RED 0.5
BX35
BX34
BX38
BX33
BLK 0.5
Clearance Light 1
Clearance Light 2
Clearance Light 3
BX37
BX037B
B-145
B-144
ZZ019B
B-48 Junction Block
ZZ020B
B-53
J/B 2
BLK 2
Ground Distribution
B-377 Splice Pack
B-600 Splice Pack
B-601 Splice Pack
B-602 Splice Pack
ZZ050B
ZZ051B
ZZ052B
ZZ003B
B-51

Figure 41

2026 Chevrolet Low Cab Forward

Rear Turn Signals Lights

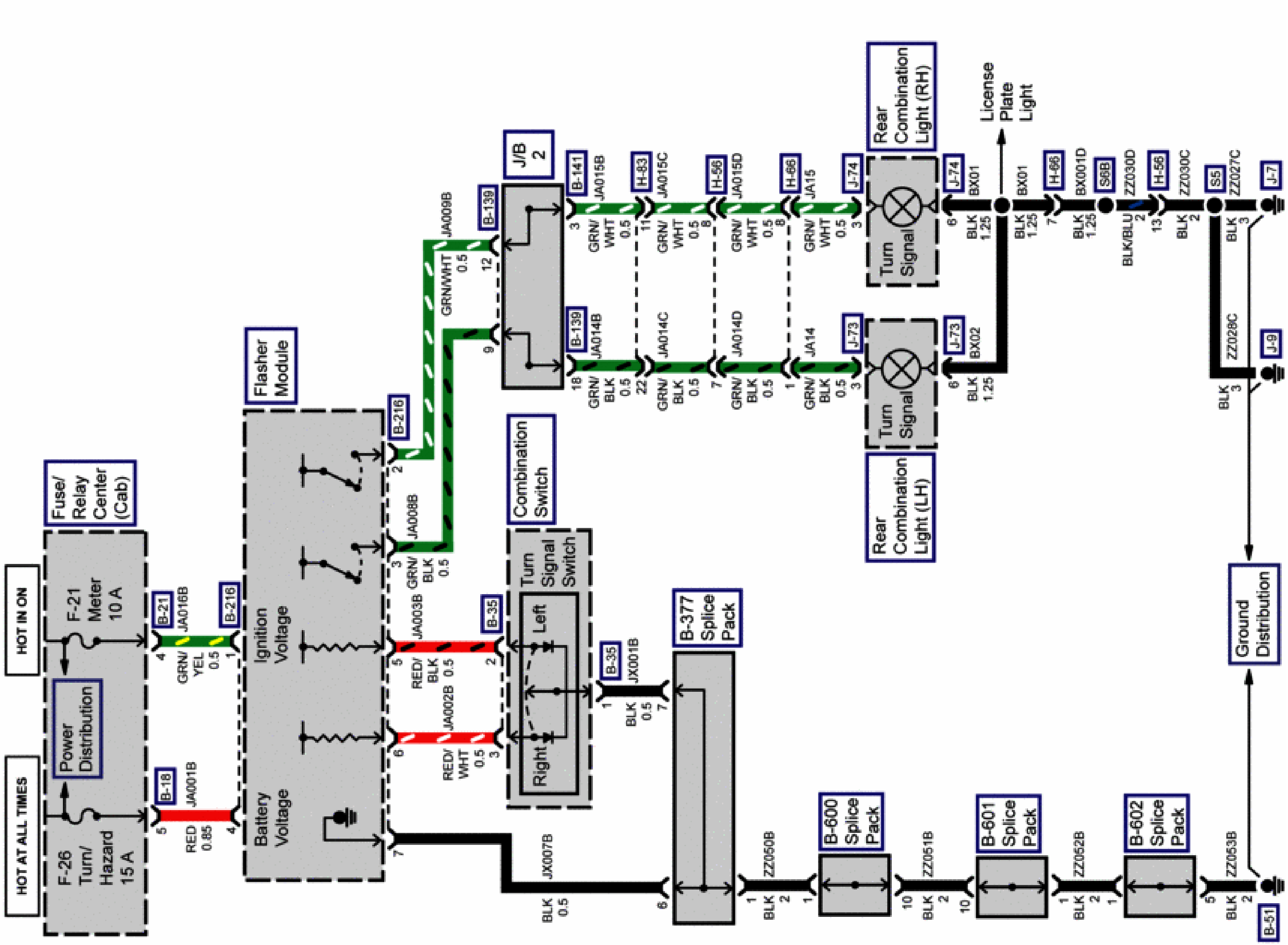

HOT AT ALL TIMES
HOT IN ON
Fuse/ Relay Center (Cab)
F-21 Meter 10 A
F-26 Turn/ Hazard 15 A
Power Distribution
B-21
JA016B
GRN/ YEL 0.5
B-18
JA001B
RED 0.85
B-216
Flasher Module
Ignition Voltage
Battery Voltage
JA008B
GRN/ BLK 0.5
JA009B
GRN/WHT 0.5
B-139
J/B 2
B-141
JA015B
JA014B
GRN/ WHT 0.5
GRN/ BLK 0.5
H-83
JA015C
JA014C
H-56
JA015D
JA014D
H-66
JA15
JA14
J-74
J-73
Turn Signal
Rear Combination Light (RH)
Rear Combination Light (LH)
License Plate Light
BX01
BX02
BLK 1.25
BX001D
S6B
ZZ030D
BLK/BLU 2
ZZ030C
BLK 2
S5
ZZ027C
BLK 3
J-7
ZZ028C
J-9
Ground Distribution
Combination Switch
Turn Signal Switch
Left
Right
B-35
JA003B
RED/ BLK 0.5
JA002B
RED/ WHT 0.5
JX001B
BLK 0.5
B-377 Splice Pack
JX007B
BLK 0.5
ZZ050B
B-600 Splice Pack
ZZ051B
B-601 Splice Pack
ZZ052B
B-602 Splice Pack
ZZ053B
BLK 2
B-51

Figure 42

Radio Circuits

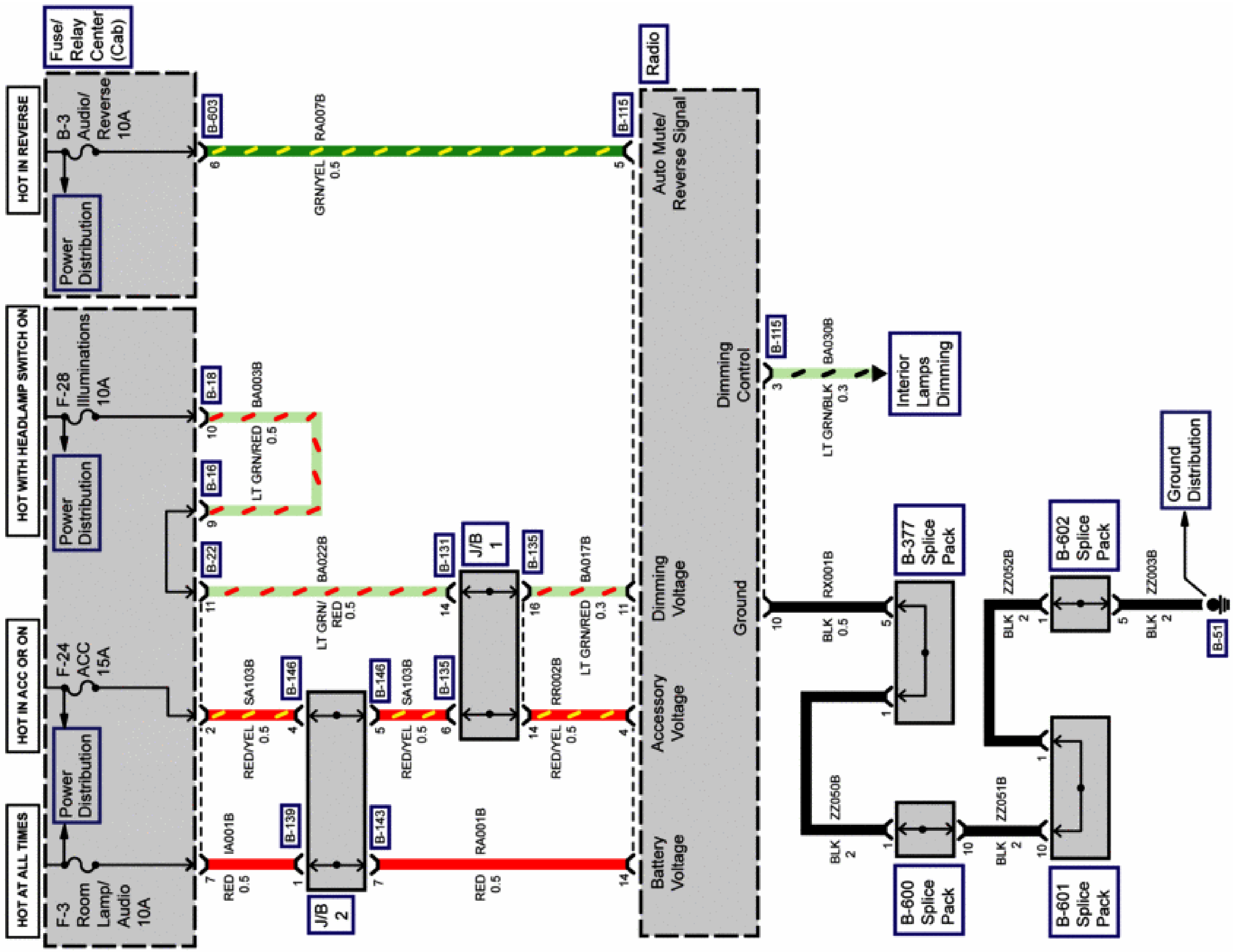
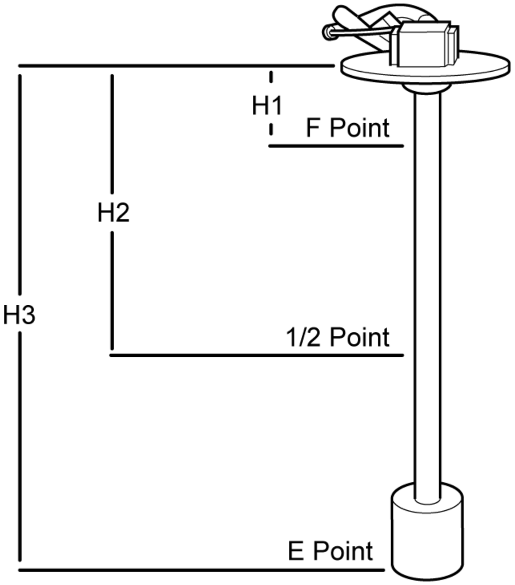

Fuse/ Relay Center (Cab)
HOT IN REVERSE
B-3 Audio/ Reverse 10A
Power Distribution
HOT WITH HEADLAMP SWITCH ON
F-28 Illuminations 10A
Power Distribution
HOT IN ACC OR ON
F-24 ACC 15A
Power Distribution
HOT AT ALL TIMES
F-3 Room Lamp/ Audio 10A
B-603
6
RA007B
GRN/YEL 0.5
B-115
5
Radio
Auto Mute/ Reverse Signal
B-18
10
BA003B
LT GRN/RED 0.5
B-16
9
B-22
11
BA022B
LT GRN/ RED 0.5
B-131
14
J/B 1
B-135
16
BA017B
LT GRN/RED 0.3
11
Dimming Voltage
2
SA103B
RED/YEL 0.5
B-146
4
B-146
5
SA103B
RED/YEL 0.5
B-135
6
14
RR002B
RED/YEL 0.5
4
Accessory Voltage
7
IA001B
RED 0.5
B-139
1
J/B 2
B-143
7
RA001B
RED 0.5
14
Battery Voltage
Dimming Control
B-115
3
BA030B
LT GRN/BLK 0.3
Interior Lamps Dimming
Ground
10
RX001B
BLK 0.5
5
B-377 Splice Pack
1
ZZ050B
BLK 2
1
B-600 Splice Pack
10
ZZ051B
BLK 2
10
B-601 Splice Pack
1
ZZ052B
BLK 2
1
B-602 Splice Pack
5
ZZ003B
BLK 2
B-51
Ground Distribution

Figure 43

Fuel Sending Unit Resistance Values


H1
F Point
H2
H3
1/2 Point
E Point

Float Position	Distance to Flange (mm)	Distance to Flange (in)	Resistance Value (ohms)
H1 - Full	132	5.20	14.1
H2 - Half	276	10.87	44.1
H3 - Empty	420	16.54	100

Figure 44

Electrical Symbols

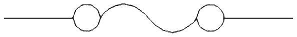
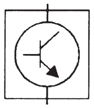
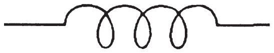
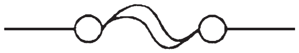
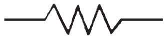
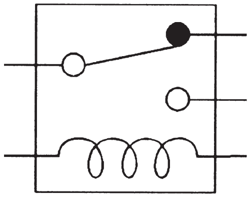
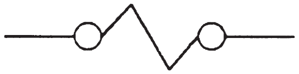
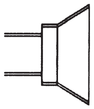
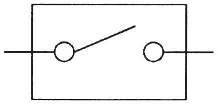
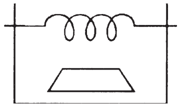
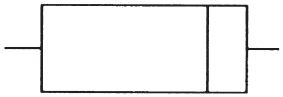
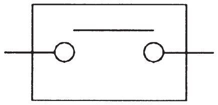
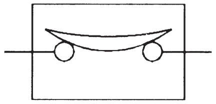
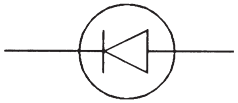
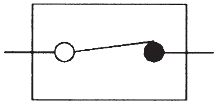
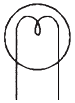
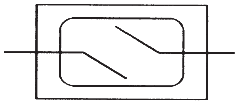
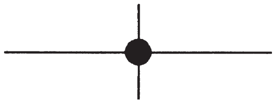
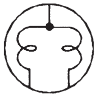
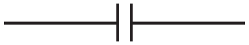
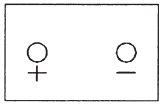
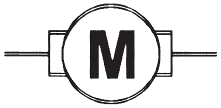
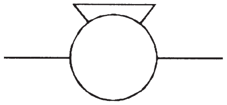
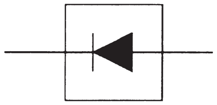
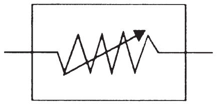
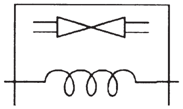
	Fuse		Electronic Parts		Coil (Inductor), Solenoid Magnetic Valve
	Fusible Link		Resistor		Relay
	Fusible Link Wire		Speaker		
	Switch		Buzzer		Connector
	Switch		Circuit Breaker		Light-Emitting Diode
	Switch (Normal Close Type)		Bulb		Reed Switch
	Contact Wiring		Double-Filament Bulb		Condenser
	Battery		Motor		Horn
	Diode		Variable Resistor Rheostat		Vacuum Switching Valve

Figure 45

Abbreviations

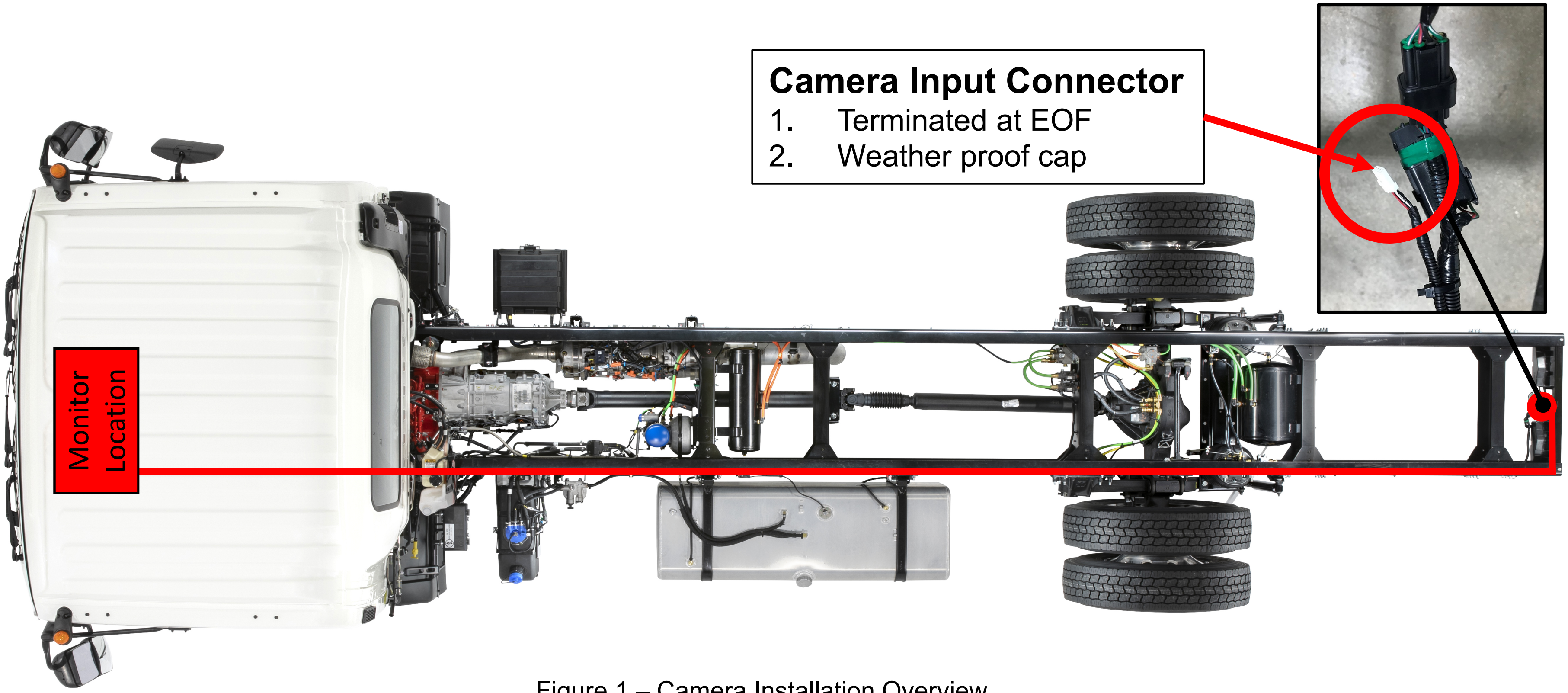
Abbreviation	Definition	Abbreviation	Definition
3A/T	6-Speed Automatic Transmission	IG	Ignition
4A/T	4-Speed Automatic Transmission	kW	kilowatt
A/T	Automatic Transmission	LH	Left hand
ABS	Anti-lock brake system	LO	Low
APP	Accelerator pedal position	LWB	Long wheelbase
ATF	Automatic Transmission Fluid	M/T	Manual Transmission
AUTO	Automatic	M/V	Magnetic valve
BRKT	Bracket	MAF	Mass airflow
C/B	Circuit breaker	MIL	Check engine light
CKP	Crankshaft position	OD	Over drive
CMP	Camshaft position	OPT	Option
COMB	Combination	PTO	Power Take Off
CONT	Control	RH	Right hand
D.R.L.	Day time running light	RR	Rear
DC	Direct current	SCV	Suction control valve
ECM	Electronic control module	ST	Start
ECT	Engine coolant temperature	STD	Standard
ECU	Electronic control unit	SW	Switch
EGR	Exhaust gas reticulation	SWB	Short wheelbase
EHCU	Electronic and hydraulic control unit	TCM	Transmission control module
FL	Fusible link	V	Volt
FRT	Front	VSV	Vacuum switching valve
FT	Fuel Temperature	W	Watt (S)
H/L	Headlight	W/	With
HI	High	W/O	Without
IAT	Intake air temperature	W/S	Weld splice
IC	Integrated circuit	WOT	Wide-open throttle

Figure 46

Back Up Camera Installation Information

Back Up Camera Installation Overview

- The Alpine HCE-C1100 Back Up Camera is available with RPO code I2V (Audio system with 7" diagonal color touch screen with backup camera).
- RPO codes I1V (Audio system with 7" diagonal color touch screen) and I2V (Audio system with 7" diagonal color touch screen with backup camera) will both include a pre-wired camera input connection at the end of the chassis frame. (Figure 1)



Camera Input Connector

1. Terminated at EOF
2. Weather proof cap

Figure 1 – Camera Installation Overview

Back Up Camera Installation Kit Part Numbers

KIT PART NUMBER:	Contact Dealer		
NO.	PART NUMBER	DESCRIPTION	QTY
1	8975438760	HCE-C1100 Back Up Camera	1
2	8975438730	Camera Bracket/Shroud	1
3	8975438750	23' Camera Extension Harness	1

Figure 2 – Camera Install Kit Part Numbers

- When RPO code I2V (Audio system with 7" diagonal color touch screen with backup camera) is selected, the Back Up Camera Kit will be shipped in the cab, in a poly bag, band tied to the center seat. (Figure 5).
- The Back Up Camera Kit will include the parts listed in Figure 2, provided in a sealed package. The package also includes a piece of shrink tube that should be used to protect the connection between the camera pigtail and the 23' extension harness (see the circled location in Figure 4 below).

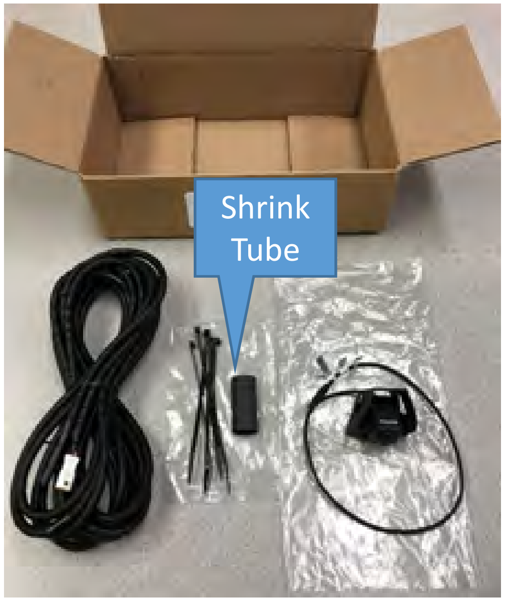


Figure 3 – Camera Install Kit

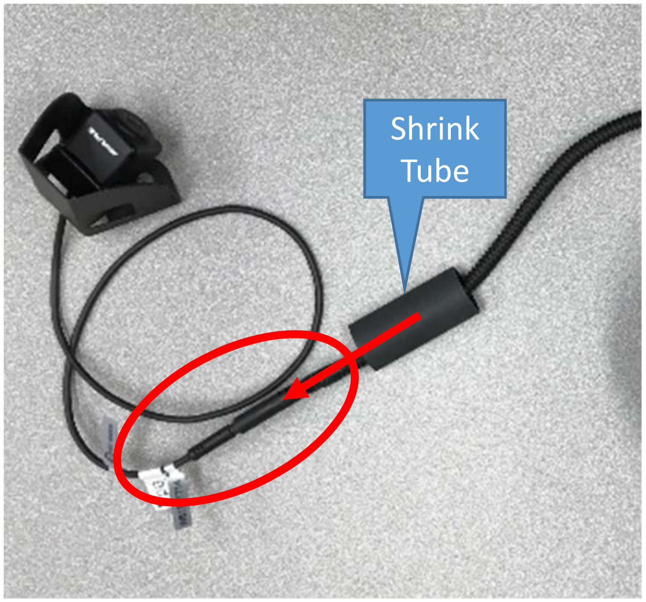


Figure 4 – Camera Install Kit Shipping Location

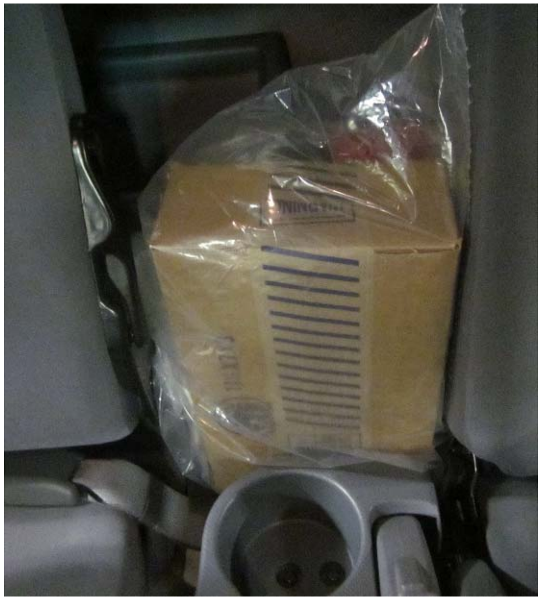


Figure 5 – Camera Install Kit Shipping Location

Back Up Camera Mounting Information

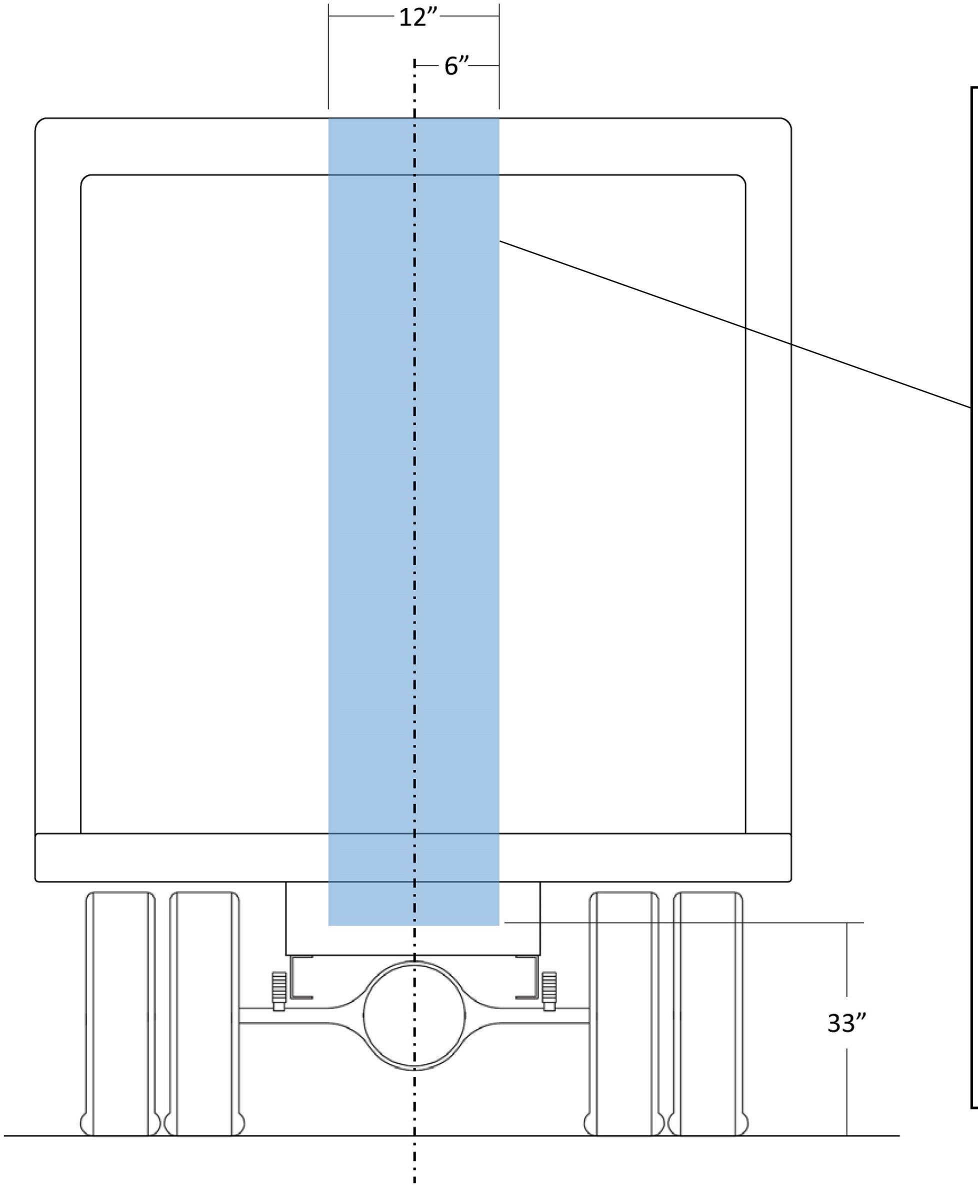


Figure 6 – Camera Mounting Area

HCE-C1100 Camera Mounting
Plate Hole Pattern

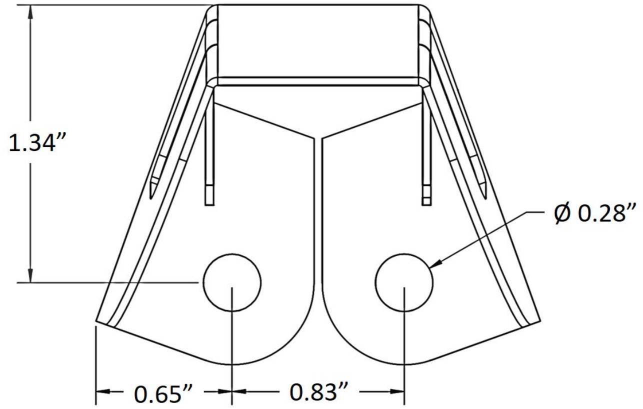


Figure 7 – Camera Mounting Hole Pattern

The Alpine HCE-C1100 camera should be mounted within the shaded area shown in Figure 6 to ensure proper rear visibility. In addition to the two mounting holes shown in Figure 7, a third hole is needed for the camera harness. This camera harness hole should be protected with a rubber grommet to prevent damage to the wiring that will pass through it. The rubber grommet and fasteners will not be included with the camera installation kit.

Power Take Off (PTO) System for LCF 5.2 L 4HK1

The engine control module (ECM) has the functionality to accommodate a variety of different PTO systems depending on up-fitter specification. These systems consist of the following:

- Stationary Preset PTO Mode
- Stationary Variable PTO Mode
- Mobile Variable PTO Mode
- Engine Shutdown Protection
- Speedometer Calibration

Each mode is used with the specification of upfitter installation, which can be programmed to a tailored use. Moreover, the following functions are common with each PTO mode:

- PTO Standby Speed
- PTO Maximum Engine Speed
- PTO Engine Shutdown
- PTO Engage Relay
- PTO (Relay Maximum) Engage Speed
- PTO Feedback

Each vehicle is factory equipped with two chassis PTO electrical connectors; PTO Harness 1 (H-126) and PTO Harness 2 (H-125). Connection points for both harnesses are located on the inner left frame rail next to the crossmember in front of the rear axle. The purpose of these connectors is to allow the upfitter to easily connect to the ECM PTO circuits without having to alter any of the factory-installed wiring.

PTO Controls

PTO (power take off) is a device that is used to provide engine power to special equipment directly from the engine or through the transmission. For details about the PTO operation, refer to the separate instruction manual provided by its maker. Improper operation of these switches may cause personal injury or damage.

NOTE

PTO mode must be enabled prior to PTO equipment operation. PTO mode can be enabled through the use of optional factory PTO switches (shown below) by pressing the PTO Main Switch and then pressing either +/- on the PTO Engine Speed Control Switch.

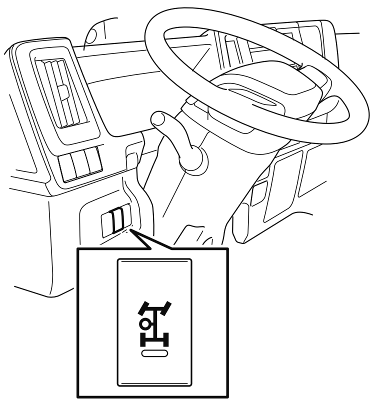
Installation of PTO Switches

Parts List:

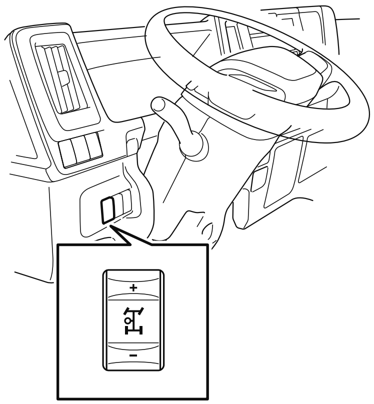
- QTY 1 - PTO Switch
- QTY 1 - PTO Adjustment

Switch Installation Instructions:

1) Remove dash cover
2) Remove two (2) hole covers (center and left) from left side dash and remove harness connectors from hole cover
3) Insert PTO On/Off Switch in center slot and PTO Adjustment Switch in left slot
4) Attach green connector to PTO switch and orange connector to PTO Adjustment Switch
5) Re-install dash panel



PTO Main Switch



PTO Engine Speed Control Switch

NOTE

The optional PTO main switch and PTO engine speed control switch can be used to increase the engine idle r/min without additional programming. Pressing the PTO main switch once increases the idle up speed to the preset 800 r/min, and pressing either +/- on the PTO engine speed control switch once activates the PTO mode. Once in PTO mode the PTO engine speed control switch can be used to adjust the idle speeds between the preset 1,300 and 1,700 r/min. Moving the selector lever from park or neutral, applying the brake pedal or releasing the parking brake will cancel PTO mode and return the engine idle speed to normal. For additional details about PTO programming, contact your local Chevrolet Dealer.

Power Take Off (PTO) System for LCF 5.2 L 4HK1

I. Stationary Preset PTO Mode

In Stationary Preset PTO Mode, the PTO control is performed while the vehicle is stopped by arbitrarily selecting one of multiple preset (up to four not including PTO Standby Speed) engine speeds as the PTO desired engine speed. If the engine speed the driver requests by pressing on the accelerator pedal is higher than the PTO desired engine speed, the accelerator pedal engine speed is used. However, the accelerator pedal engine speed cannot go higher than the PTO Maximum Engine Speed.

Hardware Configuration - The Stationary Preset PTO Mode is enabled based on the following hardware inputs to the ECM.

A. *Factory Installed Switches (optional):*

1. PTO Main Switch: The factory-option dash mounted PTO Main Switch is used to enable or cancel PTO mode. The engine speed will be set to the PTO Standby Speed when the PTO main switch is pressed. The switch is a push-lock type switch. The input circuit is connected to the ECM 56 of CH-119 connector.
2. PTO Engine Speed Control Switch: The factory-option dash mounted PTO Engine Speed Control Switch can be used in PTO mode to decrease or increase the engine speed when the switch is tapped or while this switch is pressed to (-) or (+). The switch is a momentary switch. The input circuits are connected to the ECM 54 and 69 of CH-119 connector.

Power Take Off (PTO) System for LCF 5.2 L 4HK1

B. Upfitter Installed Switches:

1. Remote PTO Set Switch: The upfitter-installed Remote PTO Set Switch can be used in PTO mode to set the Remote PTO Set Switch (same engine speed as the PTO Set Speed) when this switch is pressed. The switch needs to be a momentary switch. The PTO harness 1 connector is equipped with an input circuit to the ECM 18 of CH-119 connector through the J of H-126 connector.
2. Remote PTO Resume Switch: The upfitter-installed Remote PTO Resume Switch can be used in PTO mode to set the Remote PTO Resume Switch (same engine speed as the PTO Resume Speed) when this switch is pressed. The switch needs to be a momentary switch. The PTO harness 1 connector equipped with input circuit to the ECM 42 of CH-119 connector through the K of H-126 connector.
3. Remote Set Speed A Switch: The upfitter-installed Remote Set Speed A Switch can be used in PTO mode to set the PTO Set Speed A when this switch is pressed. The switch needs to be a toggle or push-lock switch. The PTO harness 1 connector equipped with input circuit to the ECM 30 of CH-119 connector through the D of H-126 connector.
4. Remote Set Speed B Switch: The upfitter-installed Remote Set Speed B Switch can be used in PTO mode to set the PTO Set Speed B when this switch is pressed. The switch needs to be a toggle or push-lock switch. The PTO harness 1 connector equipped with an input circuit to the ECM 46 of CH-119 connector through C of H-126 connector.
5. PTO Engage Relay: The upfitter-installed PTO Engage Relay can be used to supply switched battery voltage to operate a PTO hydraulic solenoid. The solenoid in turn allows fluid to flow to a PTO hydraulic pump. The relay is controlled via the ECM grounding the relay coil control circuit. The PTO harness 2 C of H-125 connector is equipped with the voltage feed circuit to the relay. Also, the PTO harness 2 connector is equipped with a grounding circuit to ECM 3 of CH-119 connector through B of the H-125 connector.
6. PTO Feedback Switch: Some applications require that the operator press an upfitter installed momentary switch usually located outside the cab before entering any PTO set speed (not PTO Standby Speed). The switch is normally tied into the PTO Engage Relay switch circuit. Once the switch is pressed with the relay turned ON, the ECM should detect a high voltage at the PTO Feedback Switch input. This momentarily high input will allow the operator to use any of the PTO speeds above the PTO Standby Speed until PTO mode is cancelled. The PTO harness 1 A of H-126 connector is equipped with a voltage feed circuit to the PTO Engage Relay. Also, the PTO harness 2 connector is equipped with an input circuit to the ECM 68 of CH-119 connector through A of H-125 connector.
7. PTO Engine Shutdown Switch: The upfitter-installed PTO Engine Shutdown Switch can be used in PTO mode to turn Off the engine. The switch needs to be a toggle or push-lock switch. The PTO harness 1 connector equipped with an input circuit to the ECM 55 of CH-119 connector through the F of H-126 connector.

Power Take Off (PTO) System for LCF 5.2 L 4HK1

II. Stationary Variable PTO Mode

In Stationary Variable PTO Mode, the PTO control is performed while the vehicle is stopped by arbitrarily selecting an engine speed as the PTO desired engine speed. If the engine speed the driver requests by pressing on the accelerator pedal is higher than the PTO desired engine speed, the accelerator pedal engine speed is used.

Hardware Configuration - The Stationary Variable PTO Mode is enabled based on the following hardware inputs to the ECM.

A. Factory Installed Switches (Optional):

1. PTO Main Switch: The factory-option dash mounted PTO Main Switch is used to enable or cancel PTO mode. The engine speed will be set to the PTO Standby Speed when the PTO main switch is pressed. The switch is a pushlock type switch. The input circuit is connected to the ECM 56 of CH-119 connector.
2. PTO Engine Speed Control Switch: The factory-option dash mounted PTO Engine Speed Control Switch can be used in PTO mode to decrease or increase the engine speed when the switch is tapped or while this switch is pressed to (-) or (+). The switch is a momentary switch. The input circuits are connected to the ECM 54 and 69 of CH-119 connector.

B. Upfitter-installed Switches:

1. Remote PTO Set Switch: The upfitter-installed Remote PTO Set Switch can be used in PTO mode to decrease the engine speed when this switch is tapped or while this switch is pressed. The switch needs to be a momentary switch. The PTO harness 1 connector equipped with an input circuit to the ECM 18 of CH-119 connector through the J of H-126 connector.
2. Remote PTO Resume Switch: The upfitter-installed Remote PTO Resume Switch can be used in PTO mode to increase the engine speed at when this switch is tapped or while this switch is pressed. The switch needs to be a momentary switch. The PTO harness 1 connector equipped with input circuit to the ECM 42 of CH-119 connector through the K of H-126 connector.
3. Remote PTO Throttle: The upfitter-installed Remote PTO Throttle can be used in PTO mode to increase or decrease the engine speed the same as an accelerator pedal. The device needs to be a potentiometer. The ECM supplies 5 volts reference circuit to the Remote PTO Throttle from the ECM 14 of CH-119 connector through the E of H-125 connector. The ECM also provides a ground on the low reference circuit from the ECM 20 of CH-119 connector through the G of H-125 connector. The ECM monitors the Remote PTO Throttle signal on the ECM 11 of CH-119 connector through the F of H-125 connector.
    - a) *It is necessary to program the Remote PTO Throttle signal inputs to the ECM at position 0% and 100%.*
        - (1) Preset value at 0%: 0.85 volts
        - (2) Preset value at 100%: 3.75 volts
    - b) *If the ECM then detects the Remote PTO Throttle signal more than 4.9 volts, DTC P254D will set. The Remote PTO Throttle MUST be enabled (programmed) in the ECM.*
4. PTO Engage Relay: The upfitter-installed PTO Engage Relay can be used to supply switched battery voltage to operate a PTO hydraulic solenoid. The solenoid in turn allows fluid to flow to a PTO hydraulic pump. The relay is controlled via the ECM grounding the relay coil control circuit. The PTO harness 2 C of H-125 connector is equipped with the voltage feed circuit to the relay. Also, the PTO harness 2 connector is equipped with a grounding circuit to ECM 3 of CH-119 connector through B of the H-125 connector.
5. PTO Feedback Switch: Some applications require that the operator press an upfitter installed momentary switch usually located outside the cab before entering any PTO set speed (not PTO Standby Speed). The switch is normally tied into the PTO Engage Relay switch circuit. Once the switch is pressed with the relay turned ON, the ECM should detect a high voltage at the PTO Feedback Switch input. This momentarily high input will allow the operator to use any of the PTO speeds above the PTO Standby Speed until PTO mode is canceled. The PTO harness 1 A of H-126 connector is equipped with a voltage feed circuit to the PTO Engage Relay. Also, the PTO harness 2 connector is equipped with an input circuit to the ECM 68 of CH-119 connector through A of H-102 connector.

6. PTO Engine Shutdown Switch: The upfitter-installed PTO Engine Shutdown Switch can be used in PTO mode to turn Off the engine. The switch needs to be a toggle or push-lock switch. The PTO harness 1 connector equipped with an input circuit to the ECM 55 of J-419 connector through the F of H-126 connector.
7. PTO Engine Shutdown Switch input MUST be enabled (programmed) in the ECM AND the ECM must detect a low voltage input at pin 55 of CH-119 connector. These both are necessary for this shutdown feature to operate.

III. Mobile Variable PTO Mode

In Mobile Variable PTO Mode, the PTO control is performed while the vehicle is running by arbitrarily selecting engine speeds as the PTO desired engine speed. The system allows increases or decreases above the PTO Standby Speed by two switch inputs into the ECM while the vehicle is moving. If the engine speed the driver requests by pressing on the accelerator pedal is higher than the PTO desired engine speed, the accelerator pedal engine speed is used.

The PTO Maximum Vehicle Speed for Mobile Variable PTO Mode can change within the following allowable range:

- Minimum: 0 MPH (0 km/h)
- Maximum: 75 MPH (120 km/h)
- Preset value: 75 MPH (120 km/h)

In order to burn off the accumulated PM in the diesel particulate filter (DPF) during the mobile variable mode, entering the regeneration event is allowed via ECM programming.

- Preset Value: No

Power Take Off (PTO) System for LCF 5.2 L 4HK1

Hardware Configuration - Mobile Variable Mode uses only switches in the cab and is enabled based on the following hardware inputs to the ECM.

A. Factory Installed Switches (Optional):
   1. PTO Main Switch: The factory-option dash mounted PTO Main Switch is used to enable or cancel PTO mode. The engine speed will be set to the PTO Standby Speed when the PTO main switch is pressed. The switch is a push-lock type switch. The input circuit is connected to the ECM 56 of CH-119 connector.
   2. PTO Engine Speed Control Switch: The factory-option dash mounted PTO Engine Speed Control Switch can be used in PTO mode to decrease or increase the engine speed when the switch is tapped or while this switch is pressed to (-) or (+). The switch is a momentary switch. The input circuits are connected to the ECM 54 and 69 of CH-119 connector.

B. Upfitter-installed:
   1. PTO Engage Relay: The upfitter-installed PTO Engage Relay can be used to supply switched battery voltage to operate a PTO hydraulic solenoid. The solenoid in turn allows fluid to flow to a PTO hydraulic pump. The relay is controlled via the ECM grounding the relay coil control circuit. The PTO harness 2 C of H-125 connector is equipped with the voltage feed circuit to the relay. Also, the PTO harness 2 connector is equipped with a grounding circuit to ECM 3 of CH-119 connector through B of the H-125 connector.
   2. PTO Feedback Switch: Some applications require that the operator press an upfitter installed momentary switch usually located outside the cab before entering any PTO set speed (not PTO Standby Speed). The switch is normally tied into the PTO Engage Relay switch circuit. Once the switch is pressed with the relay turned ON, the ECM should detect a high voltage at the PTO Feedback Switch input. This momentarily high input will allow the operator to use any of the PTO speeds above the PTO Standby Speed until PTO mode is cancelled. The PTO harness 1 A of H-126 connector is equipped with a voltage feed circuit to the PTO Engage Relay. Also, the PTO harness 2 connector is equipped with an input circuit to the ECM 68 of CH-119 connector through A of H-125 connector.
   3. PTO Engine Shutdown Switch: The upfitter-installed PTO Engine Shutdown Switch can be used in PTO mode to turn Off the engine. The switch needs to be a toggle or push-lock switch. The PTO harness 1 connector equipped with an input circuit to the ECM 55 of CH-119 connector through the F of H-126 connector.
      a) *PTO Engine Shutdown Switch input MUST be enabled (programmed) in the ECM AND the ECM must detect a low voltage input at pin 55 of CH-119 connector. These both are necessary for this shutdown feature to operate.*

Caution About Regeneration

1. The check engine malfunction indicator light and reduced engine power indicator light may come on and the power output may be limited if driving or power take-off (PTO) operation is continued for a long time with the regeneration required warning light or selectable (switch) regeneration required warning light (amber/red) on.

2. This is to prevent the DPF from being damaged. When operating PTO during parking, check to ensure that the regeneration required warning light or selectable (switch) regeneration required warning light (amber/red) on the MID is not on.

3. The exhaust pipe is extremely hot immediately after vehicle operation. Before parking, make sure the area is free of flammable material (for example, grass, waste paper, oil or old tires).

4. Take particular care when parking in a garage.

5. Use caution concerning exhaust gases while the engine is idling. Be particularly careful when the power take-off (PTO) is operating (if your vehicle is equipped with a PTO) or the DPF is regenerating while the engine is idling.

Additional PTO Functions

These additional functions can be programed into the ECM:

A. Manual Regeneration only for GSE vehicles
   For certain applications the automatic regeneration function can be inhibited and manual regeneration only can be programed.
   (Example Airport Ground Support vehicles).

B. Allow Automatic Regeneration in PTO Mode
   For certain applications the Automatic regeneration function can be enabled in the PTO stationary mode
   (Example Lawn care and carpet cleaning).

C. Allow Automatic Regeneration in PTO Mode
   For certain applications the Automatic regeneration function can be enabled in the PTO mobile mode
   (Example Line painting).

Procedure for Setting Manual Regeneration in Power Take-off Mode

1. Choose the correct Model Year, Model and Transmission type using IDSS, then click ‘Submit’.
2. Click on ‘Controller Programming’ in the table of contents on the left.
3. Click on Engine Control Module > Vehicle Options, then choose the PTO Options tab on the right.
4. Select the correct PTO Options for the vehicle that is being setup. Manual DPF Regeneration in PTO
5. Click Download when all of the PTO options have been changed, then follow the On-screen instructions to complete the programming process.

Procedure for Setting Auto Regeneration in Power Take-off Mode

1. Choose the correct Model Year, Model and Transmission type using IDSS, then click ‘Submit’.
2. Click on ‘Controller Programming’ in the table of contents on the left.
3. Click on Engine Control Module > Vehicle Options, then choose the PTO Options tab on the right.
4. Select the correct PTO Options for the vehicle that is being setup. The two programmable options for automatic regeneration are as follows:
    a. Auto DPF Regen in PTO within RPM Range. This is for use in Stationary PTO mode.
    b. Auto DPF Regen in Mobile PTO Standby or Driving. This is for use in Mobile PTO mode
5. Click Download when all of the PTO options have been changed, then follow the On-screen instructions to complete the programming process.

Selectable DPF Regeneration - Only For Use With Ground Support Equipment (GSE) Vehicles

Certain applications require the Automatic Regeneration Function to be inhibited and Manual DPF Regeneration only to be used. The ECM via the IDSS tool can be programed for this function.

IDSS Programing procedure:

Controller Programming\Engine Control Module\Vehicle Options\DPF Options

1. Change Auto DPF Regen Disable from NO to YES.
    a. NO = Automatic Regen (factory default value)
    b. YES = Selectable DPF Regeneration only

Performing a Selectable DPF Regeneration

During regeneration, white smoke may be temporarily produced from the exhaust pipe as a result of the combustion of particulate material; it does not indicate a failure.

To ensure the selectable DPF regeneration will take shortest amount of time to complete, the engine should be at operating temperature before starting.

Selectable DPF Regeneration will complete earlier when performed immediately after driving rather than when the engine is cold. The engine coolant temperature may rise during Selectable DPF Regeneration. The time needed to complete regeneration differs depending on the outside temperature.

The exhaust brake or exhaust throttle is activated during DPF regeneration. The exhaust brake or exhaust throttle starting to operate or being disengaged will produce a sound, but this does not indicate a failure.

> **CAUTION - To prevent a fire, make sure that there is no flammable material near the muffler, DPF and exhaust pipe. Remember that the temperature of exhaust gases is high enough to burn you.**

When operating the PTO for a long time (if your vehicle is so equipped) make sure that the regeneration required warning light or selectable Regeneration Required warning light (amber) is not turning on.

Once the Selectable DPF Regeneration is started, it cannot be switched to the “Running” regeneration if interrupted.

When the “Switch” regeneration is selected, end regeneration in a single operation if possible.

During the regeneration, the engine speed may vary, causing the exhaust brake valve to be deactivated. However, while the regeneration is in progress, an indicator light (amber) appears showing regeneration is still taking place, so continue to perform regeneration until the message goes off.

Please see owner’s manual for additional details, cautions, advice, and notes.

Performing a Selectable DPF Regeneration Continued

Procedure for performing a Selectable DPF Regeneration

1. To start, the following steps are required:
    a. Engine is running
    b. Transmission is in the Park position
    c. The parking brake is applied

2. Press and hold the DPF regeneration switch. The MID will display “Checking PM Level”, this will occur while the system is checking to see if a selectable DPF regeneration can be performed.

3. Release the switch, if the DPF does not need to be regenerated, the “Checking PM Level” light will stay out. If there is enough soot accumulation in the DPF to allow a selectable DPF regeneration the MID will display “Selectable Regen Required.”

4. Press and release the switch again, the MID will display “Regeneration In Progress”. The engine RPM will raise and the exhaust brake will close. The Regeneration will take approximately 20 minutes to complete. When the engine RPM returns to idle, the DPF regeneration is completed.

Note: Once a Selectable DPF Regeneration has been started, it must be completed. Failure to complete will result in the Automatic and Emergency Running DPF Regeneration functions being disabled.

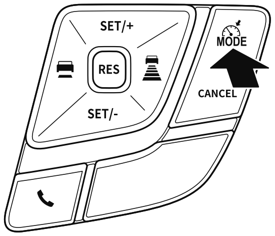
Cruise Control

The cruise control function allows you to drive the vehicle at a constant speed without operating the accelerator pedal. Use this function when the vehicle speed is between 30 and 75 MPH (48 and 121 km/h). This function should only be used when driving without frequent starts and stops.

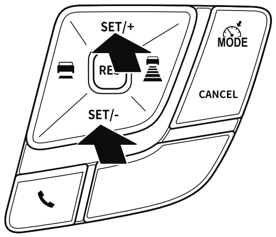
NOTE: Any time the cruise control switch is turned on, the PTO will not be engaged. Pressing the Cruise Control button to activate Cruise Control will pause PTO.

CAUTION: Cruise control can be dangerous where you cannot drive safely at a steady speed. Do not use cruise control on winding roads or in heavy traffic. Cruise control can be dangerous on slippery roads. On such roads, fast changes in tire traction can cause needless wheel spinning, and you could lose control. Do not use cruise control on slippery roads.

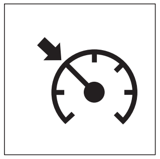
Cruise control main switch



Cruise control Set/Resume switch



Cruise Main Indicator Light



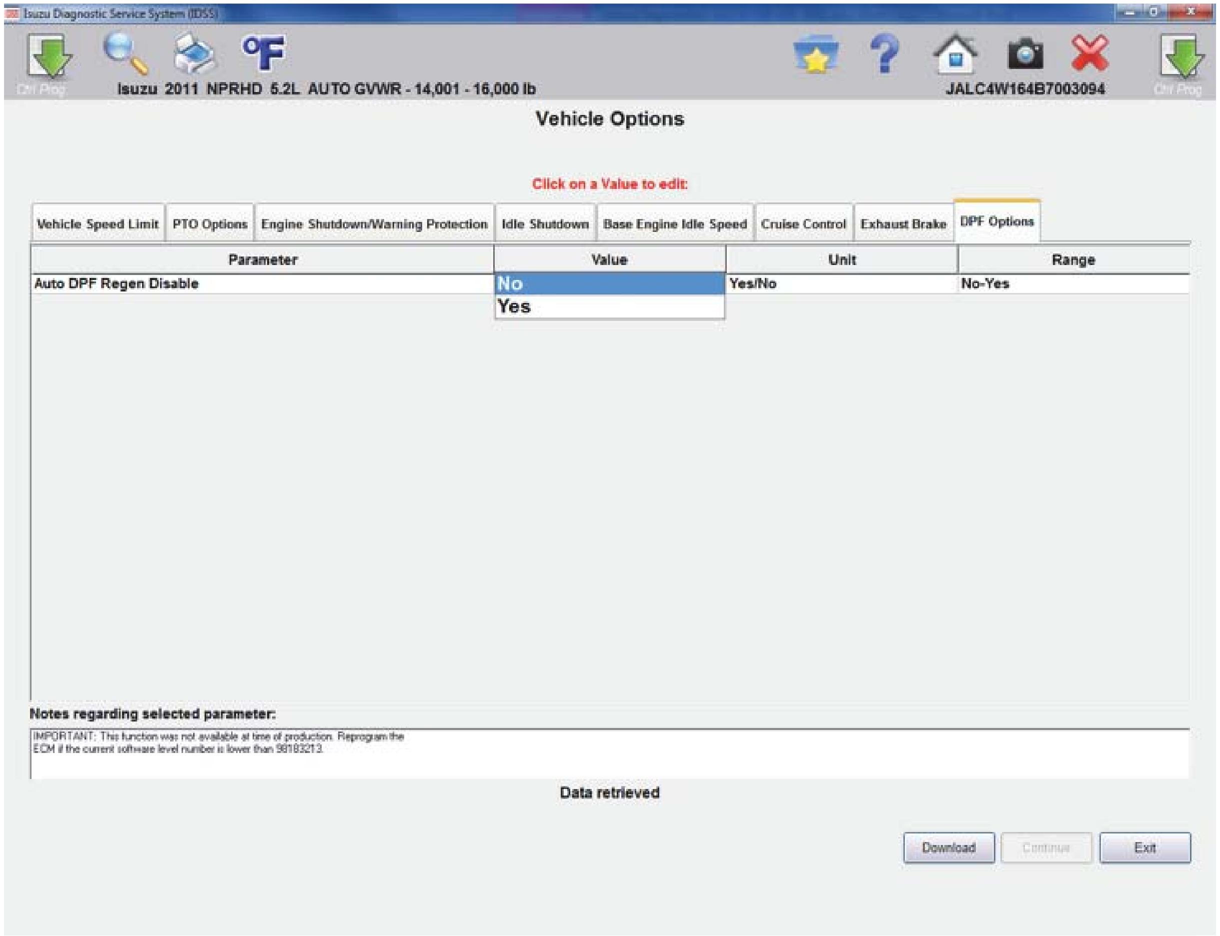
IDSS Programing Parameters

Parameter	Default	Unit	Range	Setting Criteria
PTO Standby Speed	800	RPM	650-3150	Must be an increment of 25 RPM
				Value cannot exceed PTO Max Engage Speed
				Value cannot exceed PTO Set Speed
				Value cannot exceed PTO Resume Speed
				Value cannot exceed Remote PTO Set Speed A
				Value cannot exceed Remote PTO Set Speed B
				Value cannot exceed PTO Max Engine Speed
				Value cannot exceed Remote PTO Throttle Max Engine Speed
				Value cannot exceed PTO Standby Speed Limit
PTO Standby Speed Limit	1300	RPM	650-3150	PTO Max Engine Speed must be an increment of 25 RPM
				Value cannot be less than PTO Standby Speed
				Value cannot be less than PTO Max Engage Speed
				Value cannot be less than PTO Set Speed
				Value cannot be less than PTO Resume Speed
				Value cannot be less than Remote PTO Set Speed A
				Value cannot be less than Remote PTO Set Speed B
				Value must be higher than PTO Set Speed, PTO Resume Speed, Remote PTO Set Speed
				Value cannot be less than Remote PTO Throttle Engine Speed Range
				Value cannot exceed PTO Max Engine Speed with Vehicle Moving
PTO Max Engine Speed	1050	RPM	650-3150	Must be an increment of 25 RPM
				Value cannot be less than PTO Max Engine Speed
PTO Max Engine Speed with Vehicle Moving	3050	RPM	650-3150	
PTO Max Vehicle Speed	75	mph/kmh	0-75 MPH (0-120 km/h)	
PTO Engage Relay	No	Yes/No	No-Yes	
PTO Max Engage Speed	1050	RPM	650-3150	Must be an increment of 25 RPM
				Value cannot exceed PTO Max Engage Speed
				Value cannot exceed PTO Standby SpeedValue cannot exceed Remote PTO Throttle
PTO Feedback	No	Yes/No	No-Yes	
PTO Shutdown with Circuit Input	No	Yes/No	No-Yes	Will only shut down PTO if PTO Engine Shutdown with Circuit Input is not selected
PTO Engine Shutdown with Circuit Input	No	Yes/No	No-Yes	PTO Shutdown with Circuit Input must also be selected
PTO Shutdown Vehicle Speed	1	mph/kmh	0-75 MPH (0-120 km/h)	Will only shut down PTO if PTO Engine Shutdown with Circuit Input is not selected
PTO Engine Shutdown Time Delay	0	Hrs:min:sec	00:00:00-24:00:00	
Disable Cab Controls	No	Yes/No	No-Yes	If YES, Disable Cab Controls with Circuit Input must be set to NO
Disable Cab Controls with Circuit Input	No	Yes/No	No-Yes	If YES, Disable Cab Controls must be set to NO
PTO Brake/Clutch Override with Circuit Input	No	Yes/No	No-Yes	
Auto DPF Regen in PTO within RPM Range	No	Yes/No	No-Yes	When this parameter is set to YES, automatic DPF regeneration will occur in any PTO
				mode with engine speed between 1050 and 1700 RPM.
Auto DPF Regen in Mobile PTO Standby or Driving	No	Yes/No	No-Yes	When this parameter is set to YES, automatic DPF regeneration will occur only during
				driving and standby speed when in Mobile PTO mode.
				If this value is YES, then PTO mode must equal Mobile Variable.
Manual DPF Regeneration in PTO	No	Yes/No	No-Yes	
PTO Set Speed	1300	RPM	650-3150	PTO Set Speed must be an increment of 25 RPM
				Value cannot exceed PTO Resume Speed
				Value cannot exceed PTO Max Engine Speed
				Value cannot be less than PTO Standby Speed
				Value must be 25 RPM less than PTO Resume Speed

IDSS Programing Parameters

Parameter	Default	Unit	Range	Setting Criteria
PTO Resume Speed	1700	RPM	650-3150	PTO Set Speed must be an increment of 25 RPM
				Value cannot exceed PTO Max Engine Speed
				Value cannot be less than PTO Standby Speed
				Value cannot be less than PTO Set Speed
				Value must be 25 RPM greater than PTO Set Speed
Remote PTO Set Speed AB Switches	No	Yes/No	No-Yes	
Remote PTO Set Speed A	800	RPM	650-3150	Remote PTO Set Speed A must be an increment of 10 RPM
				Value cannot exceed Remote PTO Set Speed B
				Value cannot exceed PTO Max Engine Speed
				Value cannot be less than PTO Standby Speed
				Will not work if Remote PTO Throttle is set to Yes
Remote PTO Set Speed B	800	RPM	650-3150	Remote PTO Set Speed B must be an increment of 10 RPM
				Value cannot exceed PTO Max Engine Speed
				Value cannot be less than PTO Standby Speed
				Value cannot be less than Remote PTO Set Speed A
				Will not work if Remote PTO Throttle is set to Yes
PTO Increase/Decrease RPM	25	RPM	25-1000	
PTO Accel RPM Rate	20	RPM per second	25-1000	
PTO Reduce RPM Rate	30	RPM per second	25-1000	
Remote PTO Set/Resume Switches	Yes	Yes/No	No-Yes	
Remote PTO Throttle	Yes	Yes/No	No-Yes	
Remote PTO Throttle 0%	0.85	Volts	0-5	Remote PTO Throttle 0% must be an increment of 0.05 Volts
Remote PTO Throttle 100%	3.75	Volts	0-5	Remote PTO Throttle 100% must be an increment of 0.05 Volts
Remote PTO Throttle Engine Speed Range	2100	RPM	0-2500	Remote PTO Throttle Engine Speed Range must be an increment of 10 RPM
				Value cannot be less than PTO Standby Speed
				Value cannot exceed PTO Max Engine Speed

IDSS Programing Screen


Isuzu Diagnostic Service System (IDSS)
Ctrl Prog
Ctrl Prog

Isuzu 2011 NPRHD 5.2L AUTO GVWR - 14,001 - 16,000 lb

JALC4W164B7003094

Vehicle Options

Click on a Value to edit:

Vehicle Speed Limit
PTO Options
Engine Shutdown/Warning Protection
Idle Shutdown
Base Engine Idle Speed
Cruise Control
Exhaust Brake
DPF Options

Parameter	Value	Unit	Range
Auto DPF Regen Disable	No Yes	Yes/No	No-Yes

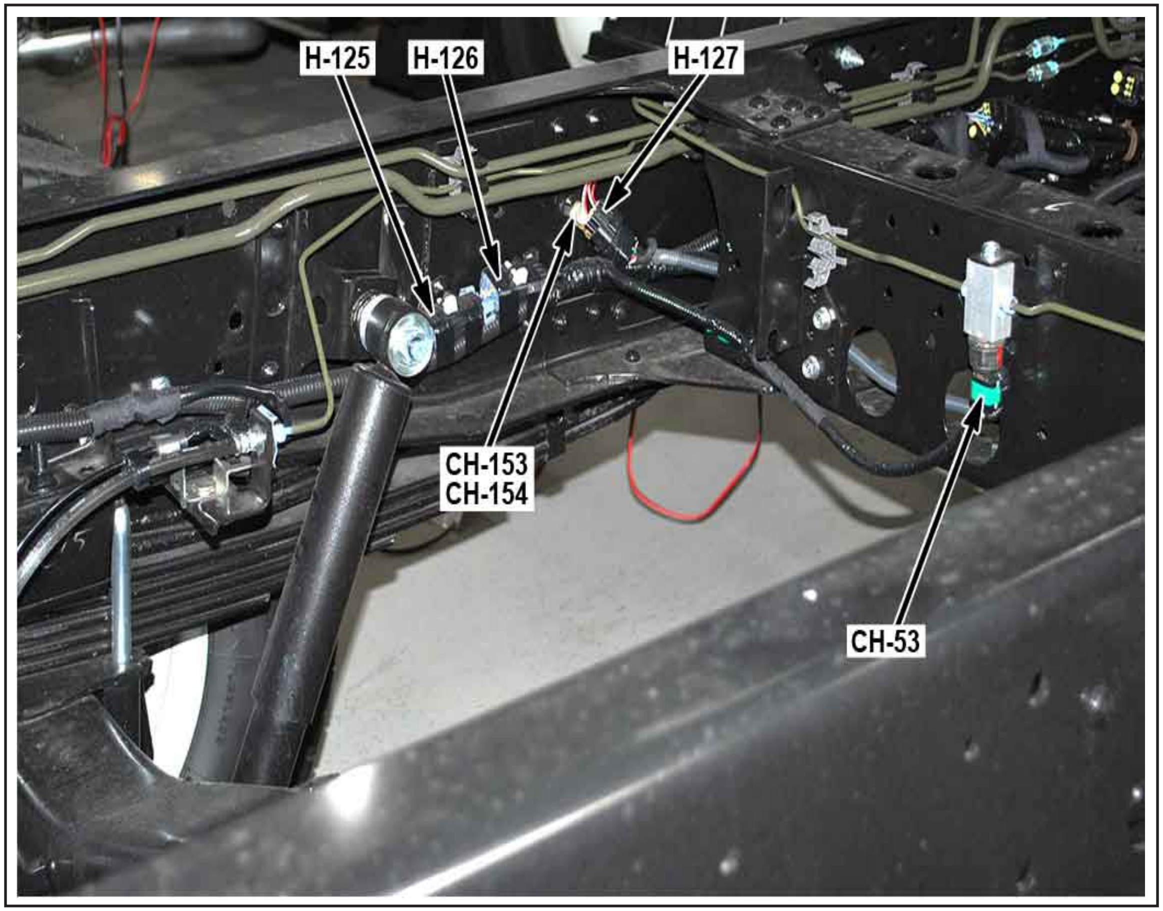
Notes regarding selected parameter:

IMPORTANT: This function was not available at time of production. Reprogram the ECM if the current software level number is lower than 98183213.

Data retrieved

Download
Continue
Exit

PTO Switch Harness H-125 & H-126

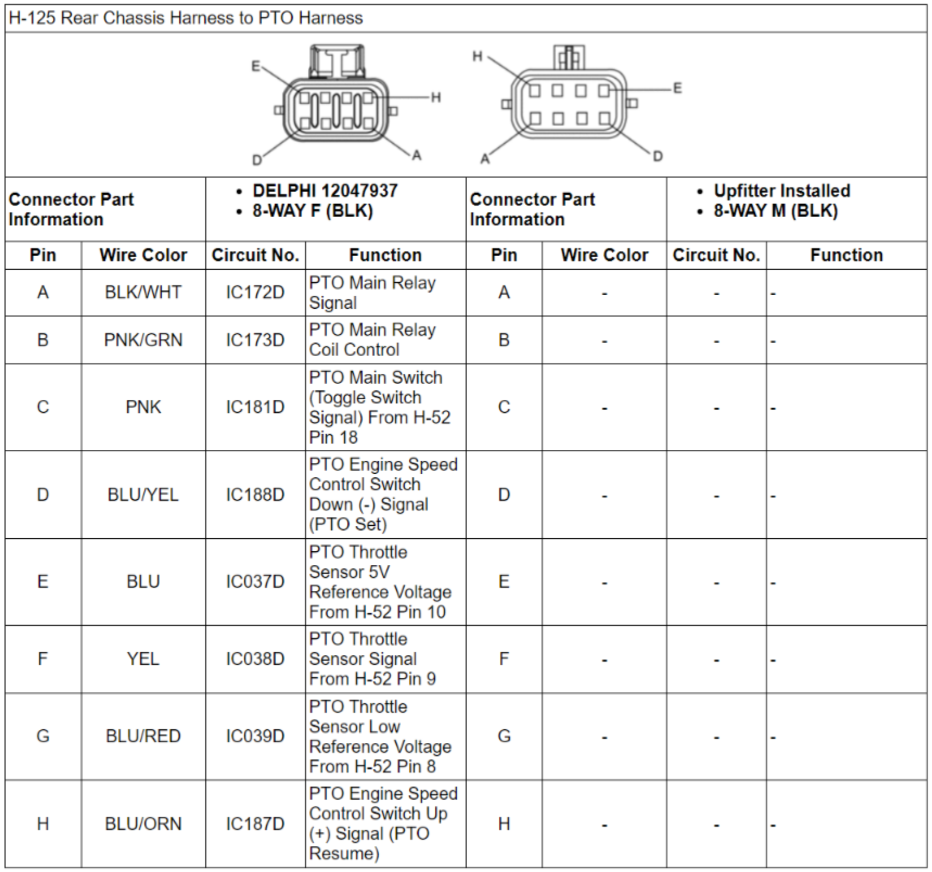

H-125
H-126
H-127
CH-153
CH-154
CH-53

NOTE: Left Inner Frame Rail, In Front of the Left Rear Upper Shock Mount

H-125 Rear Frame Harness to the PTO

Additional information and connector drawings are available at www.powerandsignal.com and at http://connectors2.delphi.com/dcsgdmcs/homepage.aspx

Pins and seals vary with wire size. Parts listed at the right are for the mating connector 12045808. Please confirm parts via web sites listed above.



H-125 Rear Chassis Harness to PTO Harness

Connector Part Information		• **DELPHI 12047937** • **8-WAY F (BLK)**		**Connector Part Information**		• **Upfitter Installed** • **8-WAY M (BLK)**	
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
A	BLK/WHT	IC172D	PTO Main Relay Signal	A	-	-	-
B	PNK/GRN	IC173D	PTO Main Relay Coil Control	B	-	-	-
C	PNK	IC181D	PTO Main Switch (Toggle Switch Signal) From H-52 Pin 18	C	-	-	-
D	BLU/YEL	IC188D	PTO Engine Speed Control Switch Down (-) Signal (PTO Set)	D	-	-	-
E	BLU	IC037D	PTO Throttle Sensor 5V Reference Voltage From H-52 Pin 10	E	-	-	-
F	YEL	IC038D	PTO Throttle Sensor Signal From H-52 Pin 9	F	-	-	-
G	BLU/RED	IC039D	PTO Throttle Sensor Low Reference Voltage From H-52 Pin 8	G	-	-	-
H	BLU/ORN	IC187D	PTO Engine Speed Control Switch Up (+) Signal (PTO Resume)	H	-	-	-

Left Inner Frame Rail, In Front of the Left Rear Upper Shock Mount

Termianl

PN	Wide range
12045773	1.0-0.08 mm2
12077628	0.5-0.35 mm2

TPA

PN
12124264
included with connector

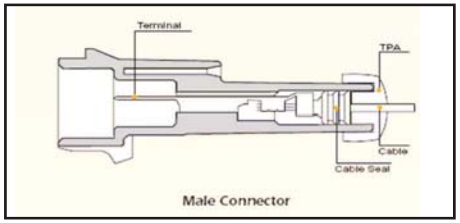
Cable Seats

Loose PN	Wide range	Color
12048086	2.85-2.03	Dk.Red
12089678	2.15-1.60	White
12048087	1.70-1.29	Blue
12084193	1.009-0.995	Tan

Cavity Plug

PN	Cavity ID	Color
12059168	5.2mm	Dk.Red

Connector H125 - H126

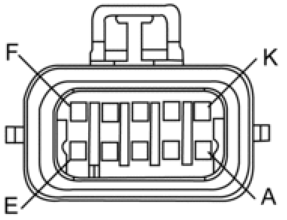


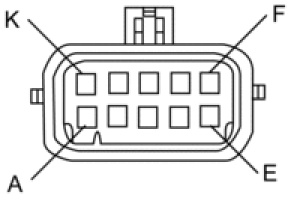
H-126 Rear Frame Harness to PTO Harness

Additional information and connector drawings are available at www.powerandsignal.com and at http://connectors2.delphi.com/dcsgdmcs/homepage.aspx

Pins and seals vary with wire size. Parts listed at the right are for the mating connector 12045808. Please confirm parts via web sites listed above.

H-126 Rear Chassis Harness to PTO Harness





Connector Part Information		• **DELPHI 12065425** • **10-WAY F (BLK)**		**Connector Part Information**		• **Upfitter Installed** • **10-WAY M (BLK)**	
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
A	RED/BLK	IC180D	Fuse OF-14 Voltage From H-114 Pin 8	A	-	-	-
B	RED/GRN	IC168D	PTO Brake/Clutch Override Switch Signal	B	-	-	-
C	RED/BLU	IC166D	Remote PTO Set Speed B Switch Signal	C	-	-	-
D	GRY/RED	IC165D	Remote PTO Set Speed A Switch Signal	D	-	-	-
E	BRN	IC167D	PTO Cab Control Disable Switch Signal	E	-	-	-
F	PNK/BLK	IC169D	PTO Engine Shutdown Switch Signal	F	-	-	-
G	-	-	Not Used	G	-	-	-
H	BLK	IZ007D	Ground to CH-153	H	-	-	-
J	RED/YEL	IC171D	Remote PTO Set Switch Signal	J	-	-	-
K	RED/BLK	IC170D	Remote PTO Resume Switch Signal	K	-	-	-

Left Inner Frame Rail, In Front of the Left Rear Upper Shock Mount

Termianl

PN	Wide range
12045773	1.0-0.08 mm2
12077628	0.5-0.35 mm2

TPA

PN
12124264
included with connector

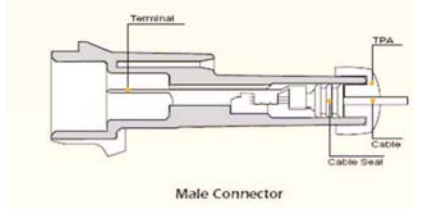
Cable Seats

Loose PN	Wide range	Color
12048086	2.85-2.03	Dk.Red
12089678	2.15-1.60	White
12048087	1.70-1.29	Blue
12084193	1.009-0.995	Tan

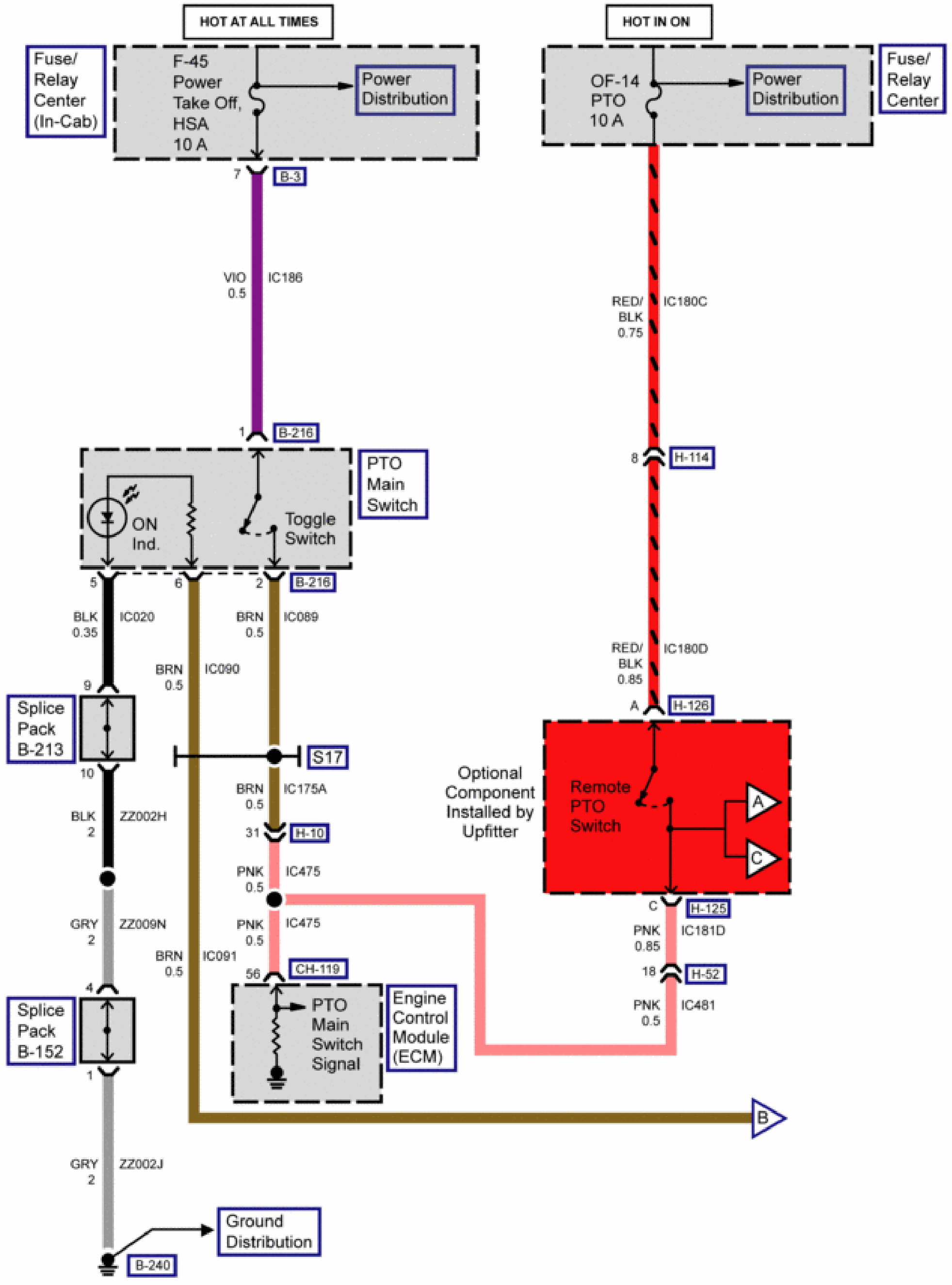
Cavity Plug

PN	Cavity ID	Color
12059168	5.2mm	Dk.Red

Connector H125 - H126

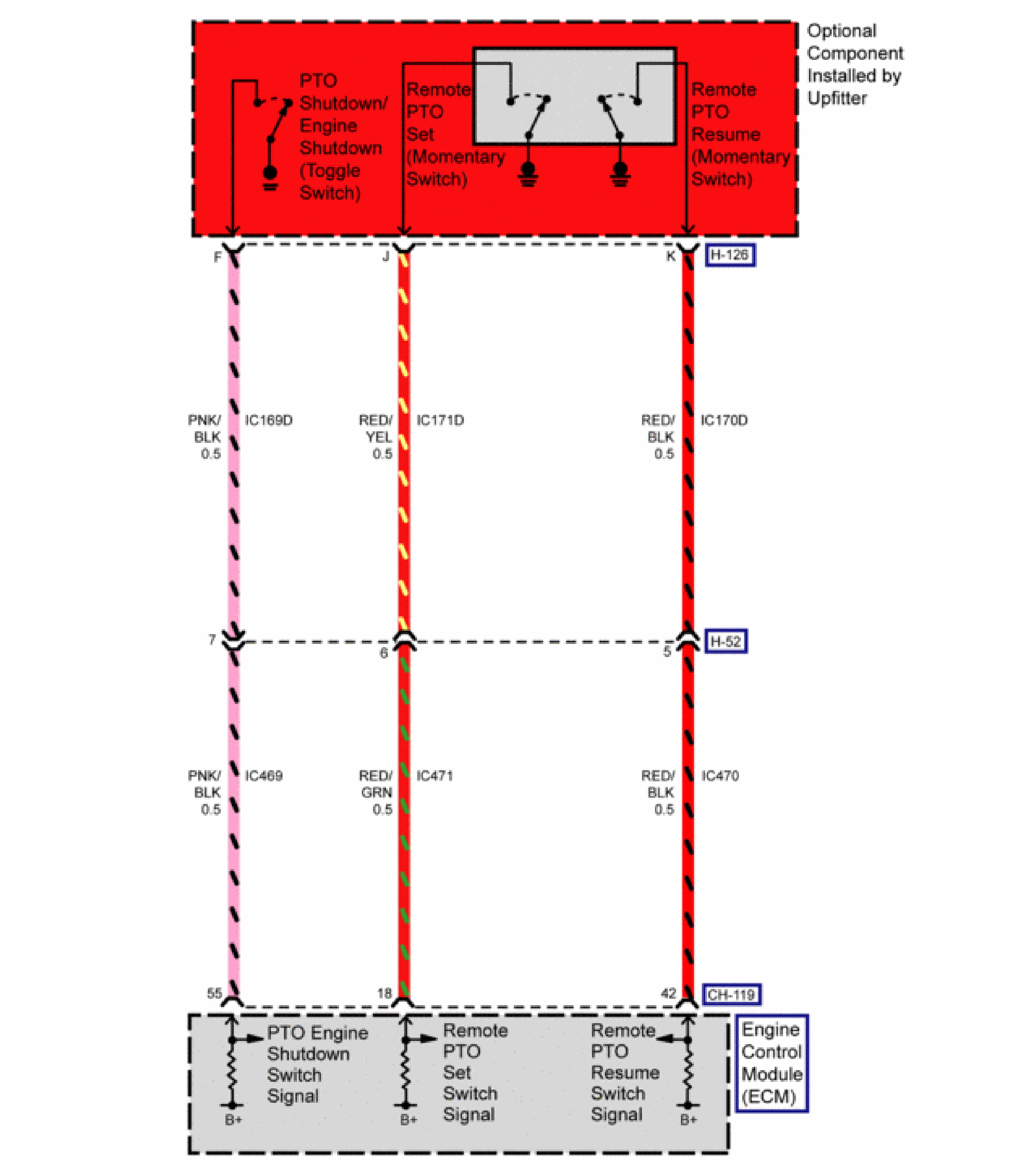


Power Take-Off Switch and Vehicle Speed Sensor 2

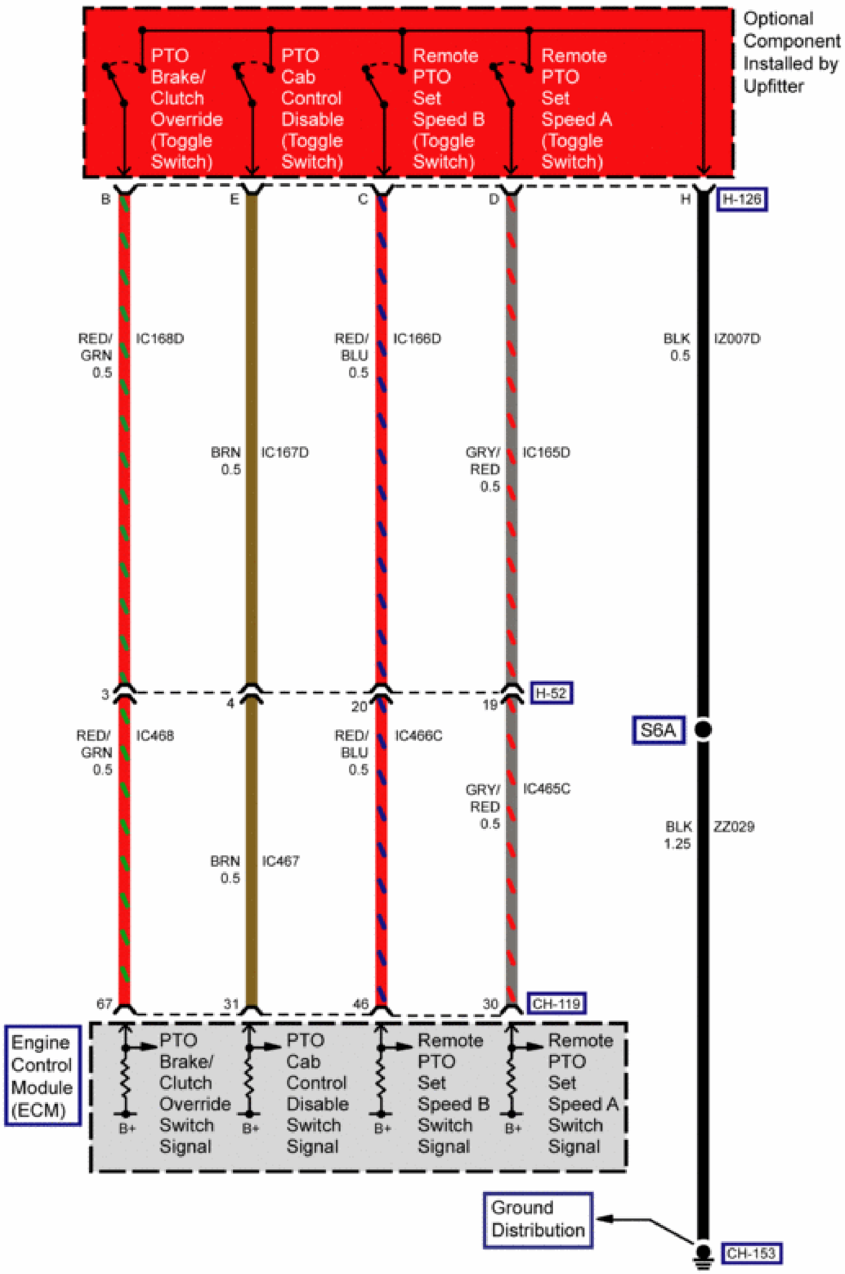


HOT AT ALL TIMES
HOT IN ON
Fuse/ Relay Center (In-Cab)
F-45 Power Take Off, HSA 10 A
Power Distribution
OF-14 PTO 10 A
Power Distribution
Fuse/ Relay Center
7
B-3
VIO 0.5
IC186
RED/ BLK 0.75
IC180C
1
B-216
8
H-114
PTO Main Switch
ON Ind.
Toggle Switch
5
6
2
B-216
BLK 0.35
IC020
BRN 0.5
IC089
BRN 0.5
IC090
RED/ BLK 0.85
IC180D
A
H-126
9
Splice Pack B-213
10
S17
BRN 0.5
IC175A
Optional Component Installed by Upfitter
Remote PTO Switch
A
C
BLK 2
ZZ002H
31
H-10
PNK 0.5
IC475
C
H-125
GRY 2
ZZ009N
PNK 0.5
IC475
PNK 0.85
IC181D
BRN 0.5
IC091
56
CH-119
18
H-52
4
Splice Pack B-152
PTO Main Switch Signal
Engine Control Module (ECM)
PNK 0.5
IC481
1
B
GRY 2
ZZ002J
Ground Distribution
B-240

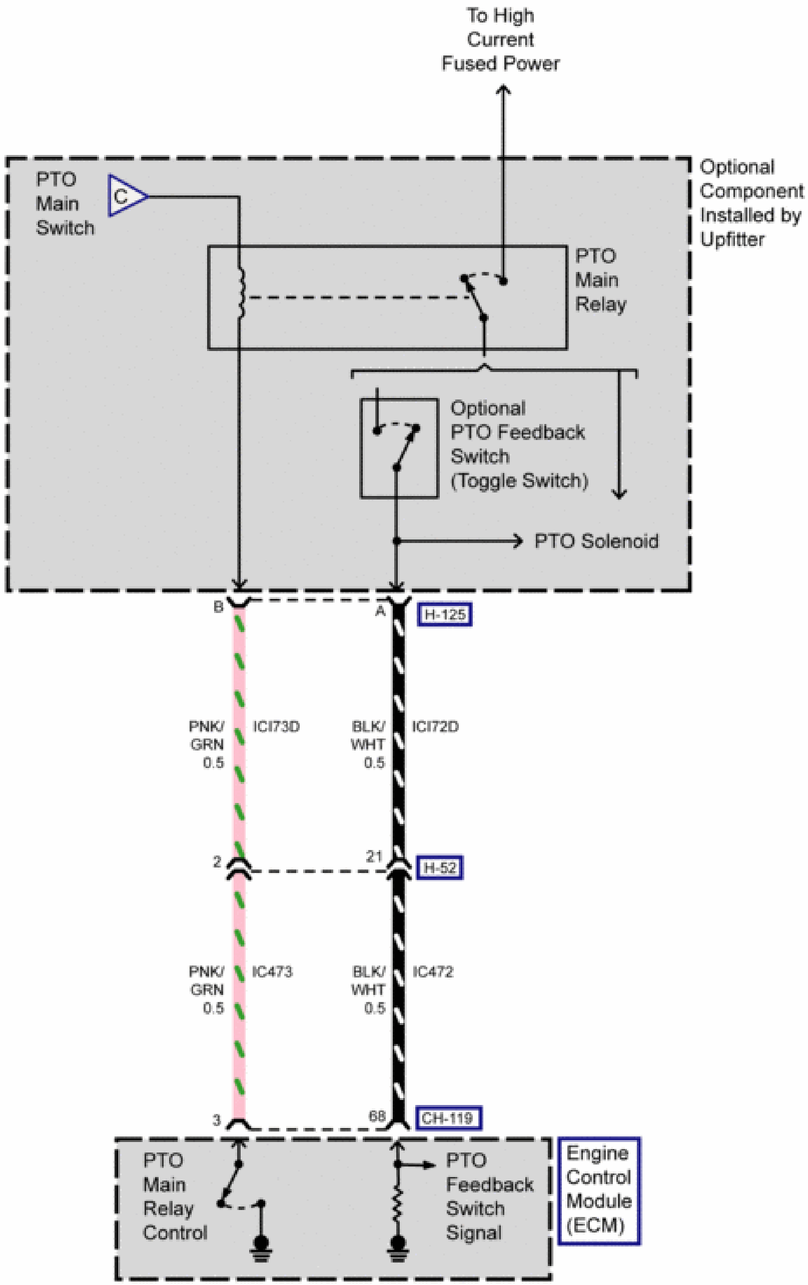
PTO Resume, Disable and Set Switch


Optional Component Installed by Upfitter
PTO Shutdown/ Engine Shutdown (Toggle Switch)
Remote PTO Set (Momentary Switch)
Remote PTO Resume (Momentary Switch)
F
J
K
H-126
PNK/ BLK 0.5
IC169D
RED/ YEL 0.5
IC171D
RED/ BLK 0.5
IC170D
7
6
5
H-52
PNK/ BLK 0.5
IC469
RED/ GRN 0.5
IC471
RED/ BLK 0.5
IC470
55
18
42
CH-119
PTO Engine Shutdown Switch Signal
Remote PTO Set Switch Signal
Remote PTO Resume Switch Signal
B+
B+
B+
Engine Control Module (ECM)

Brake Clutch Override, Cab Disable, Set Switches A and B

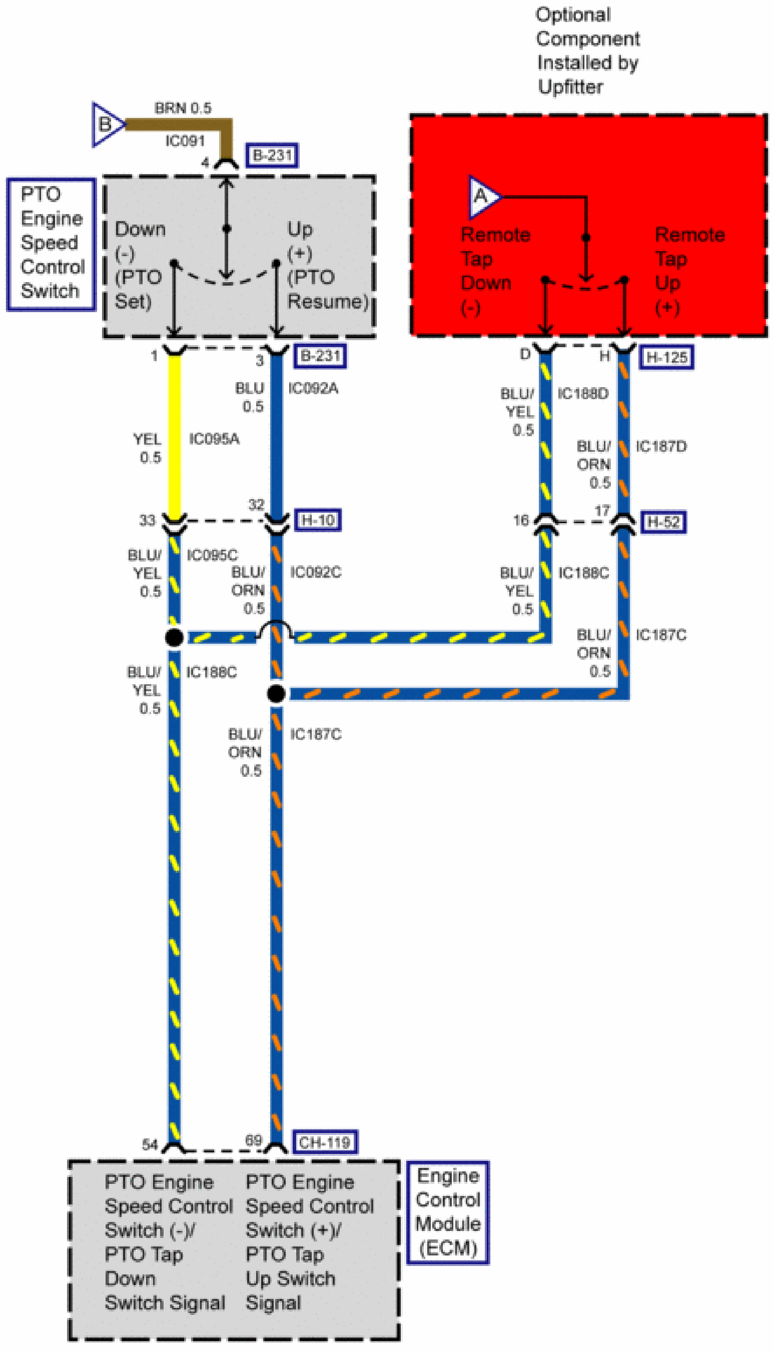

PTO Brake/ Clutch Override (Toggle Switch)
PTO Cab Control Disable (Toggle Switch)
Remote PTO Set Speed B (Toggle Switch)
Remote PTO Set Speed A (Toggle Switch)
Optional Component Installed by Upfitter
B
E
C
D
H
H-126
RED/ GRN 0.5
IC168D
BRN 0.5
IC167D
RED/ BLU 0.5
IC166D
GRY/ RED 0.5
IC165D
BLK 0.5
IZ007D
3
4
20
19
H-52
S6A
RED/ GRN 0.5
IC468
BRN 0.5
IC467
RED/ BLU 0.5
IC466C
GRY/ RED 0.5
IC465C
BLK 1.25
ZZ029
67
31
46
30
CH-119
Engine Control Module (ECM)
B+
PTO Brake/ Clutch Override Switch Signal
B+
PTO Cab Control Disable Switch Signal
B+
Remote PTO Set Speed B Switch Signal
B+
Remote PTO Set Speed A Switch Signal
Ground Distribution
CH-153

Power Take-Off Enable Relay Automatic Transmission

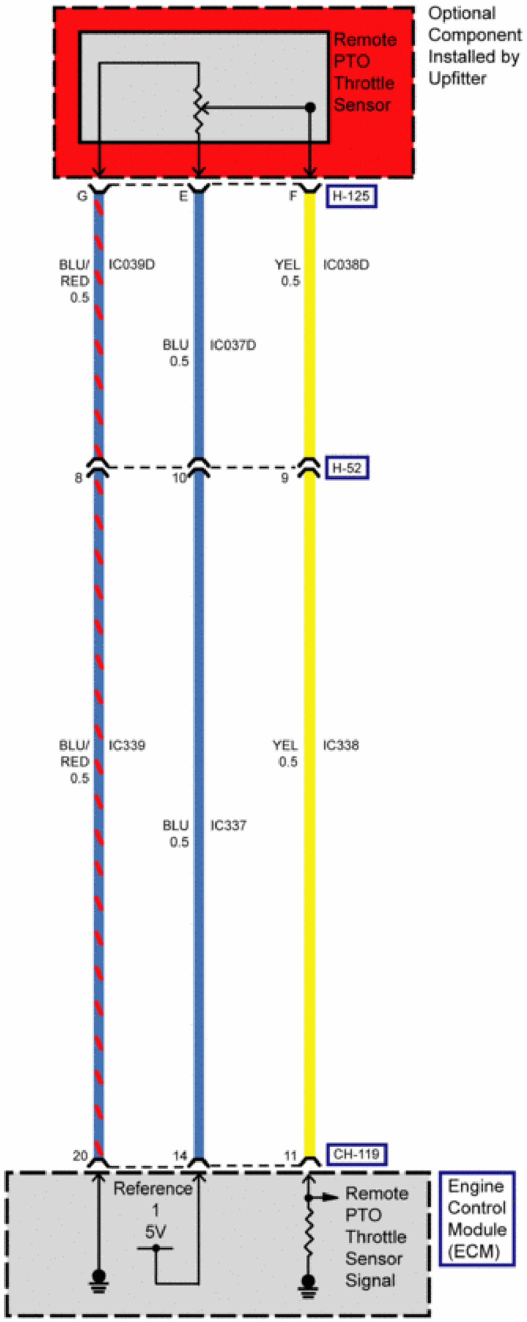


To High Current Fused Power
PTO Main Switch
C
Optional Component Installed by Upfitter
PTO Main Relay
Optional PTO Feedback Switch (Toggle Switch)
PTO Solenoid
B
A
H-125
PNK/ GRN 0.5
ICI73D
BLK/ WHT 0.5
ICI72D
2
21
H-52
PNK/ GRN 0.5
IC473
BLK/ WHT 0.5
IC472
3
68
CH-119
PTO Main Relay Control
PTO Feedback Switch Signal
Engine Control Module (ECM)

Power Take-Off Set Resume Switches (Up-Down)


Optional Component Installed by Upfitter
B
BRN 0.5
IC091
4
B-231
PTO Engine Speed Control Switch
Down (-) (PTO Set)
Up (+) (PTO Resume)
A
Remote Tap Down (-)
Remote Tap Up (+)
1
3
B-231
D
H
H-125
BLU 0.5
IC092A
YEL 0.5
IC095A
BLU/ YEL 0.5
IC188D
BLU/ ORN 0.5
IC187D
33
32
H-10
16
17
H-52
BLU/ YEL 0.5
IC095C
BLU/ ORN 0.5
IC092C
BLU/ YEL 0.5
IC188C
BLU/ ORN 0.5
IC187C
BLU/ YEL 0.5
IC188C
BLU/ ORN 0.5
IC187C
54
69
CH-119
PTO Engine Speed Control Switch (-)/ PTO Tap Down Switch Signal
PTO Engine Speed Control Switch (+)/ PTO Tap Up Switch Signal
Engine Control Module (ECM)

Power Take-Off Throttle Sensor


Remote
PTO
Throttle
Sensor
Optional
Component
Installed by
Upfitter
G
E
F
H-125
BLU/
RED
0.5
IC039D
BLU
0.5
IC037D
YEL
0.5
IC038D
8
10
9
H-52
BLU/
RED
0.5
IC339
BLU
0.5
IC337
YEL
0.5
IC338
20
14
11
CH-119
Reference
1
5V
Remote
PTO
Throttle
Sensor
Signal
Engine
Control
Module
(ECM)

PTO Pressure and Lubrication Port Locations - Aisin A450

Model Years: 1999-2007

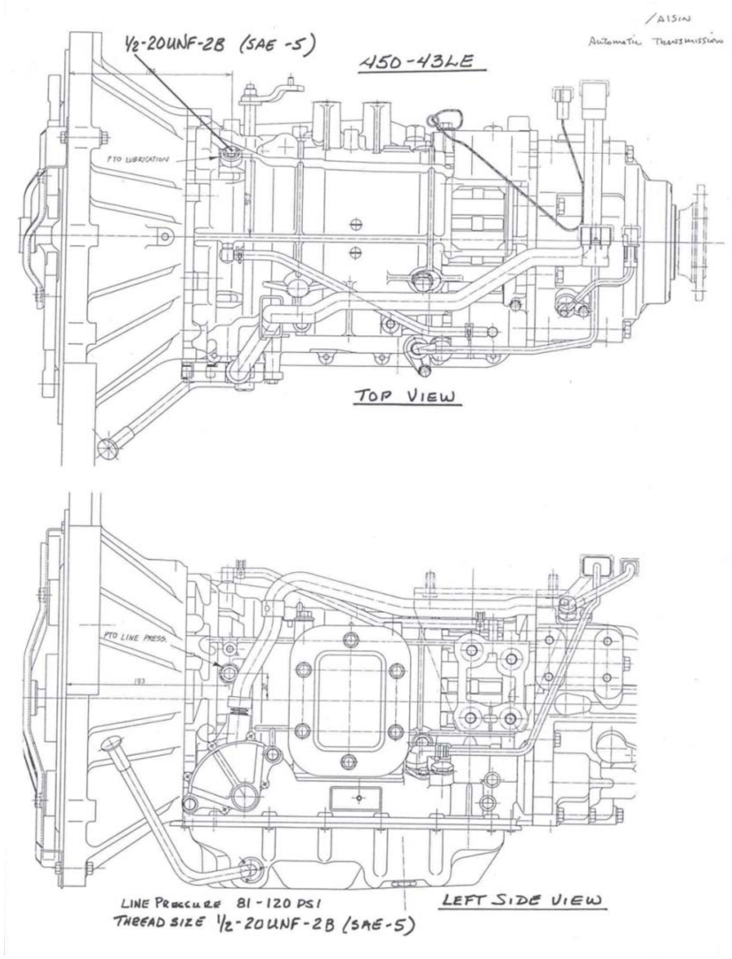
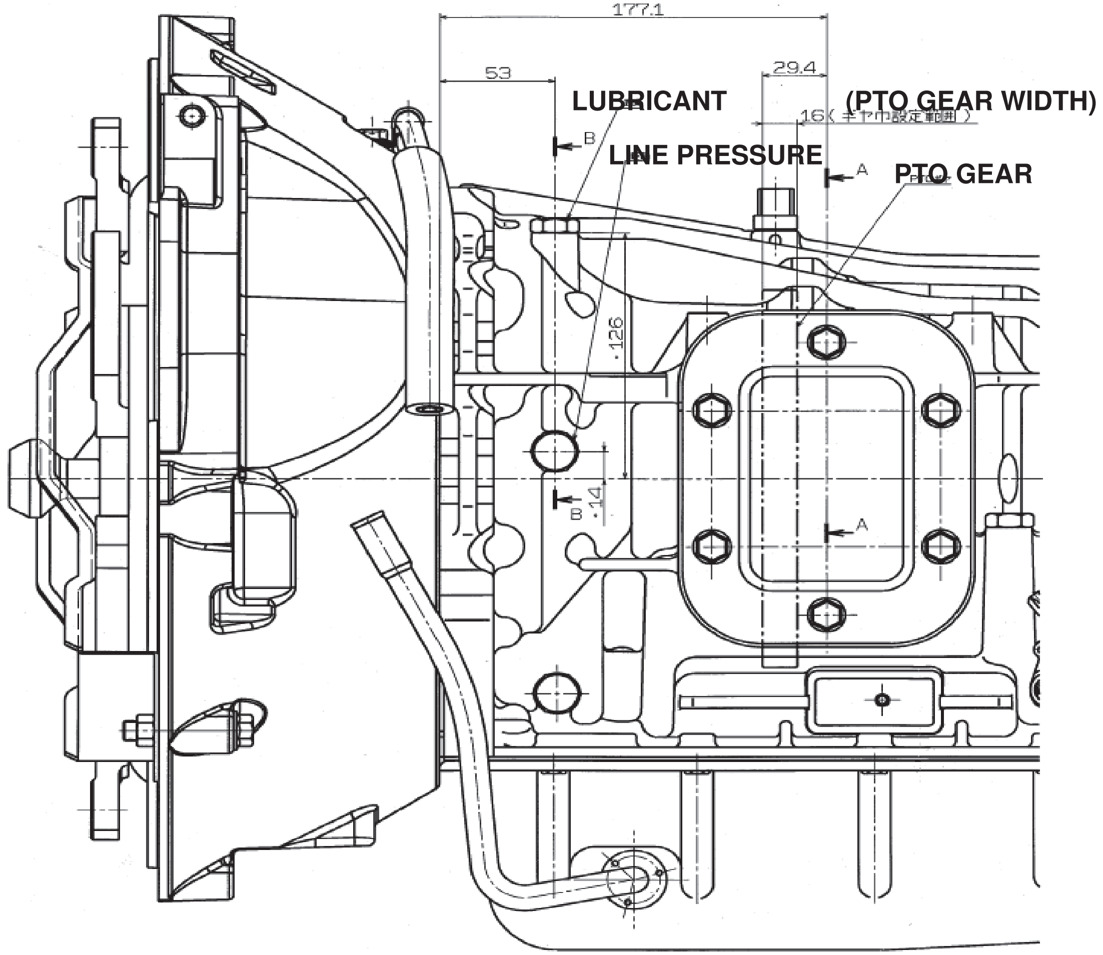

/AISIN
Automatic Transmission
1/2-20UNF-2B (SAE -5)
450-43LE
PTO LUBRICATION
TOP VIEW
PTO LINE PRESS.
193
LINE PRESSURE 81-120 PSI
THREAD SIZE 1/2-20UNF-2B (SAE-5)
LEFT SIDE VIEW

Figure 13

PTO Pressure and Lubrication Port Locations - Aisin A460

Model Years: 2011-2018

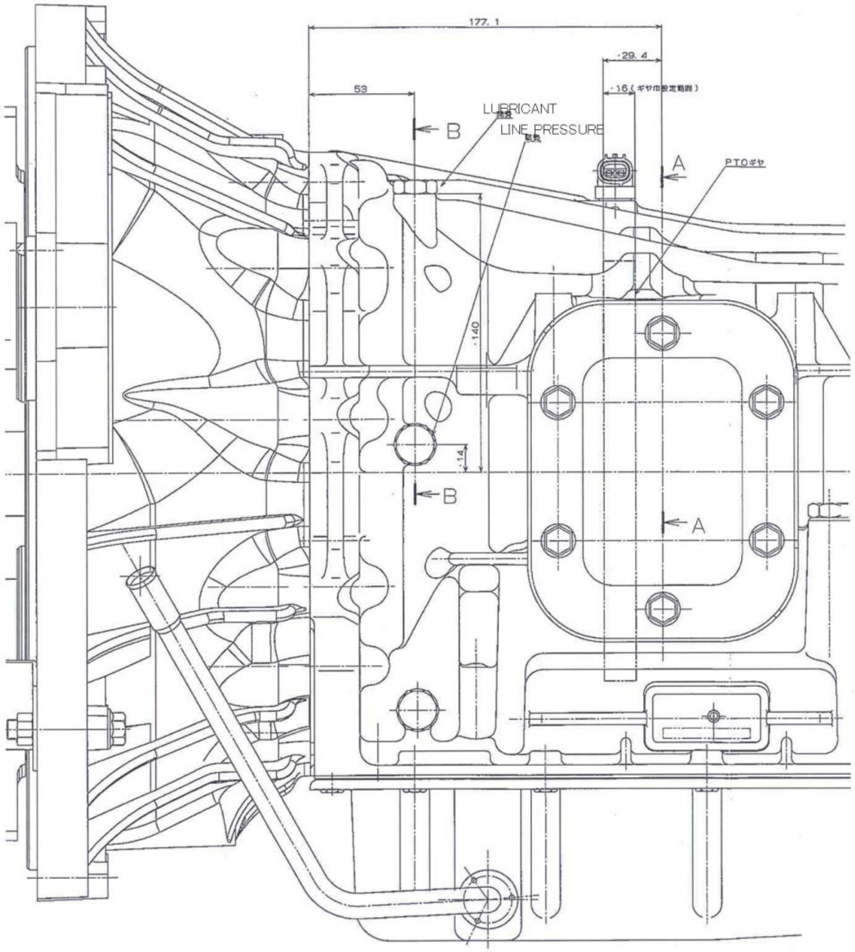

177.1
53
29.4
LUBRICANT
(PTO GEAR WIDTH)
16（ギヤ巾設定範囲）
B
LINE PRESSURE
A
PTO GEAR
126
14
B
A

Line pressure: 261PSI (1.8MPa)
Fixing Torque:
Nominal 15.5 ft-lb (21Nm)
14.0-17.7 ft-lb (19-24 Nm)

Figure 14

PTO Pressure and Lubrication Port Locations - Aisin A465

Model Years: 2007-2019


177.1
29.4
16
53
LUBRICANT
LINE PRESSURE
B
A
PTOギヤ
140
14
B
A

Line pressure: 261PSI (1.8MPa)
Fixing Torque:
Nominal 15.5 ft-lb (21Nm)
14.0-17.7 ft-lb (19-24 Nm)

Figure 15

Transmission Opening Diagram - Aisin A460 and A465

Aisin A460 and A465 Automatic Torque Converter Lock Up Function.

In either the Stationary Preset PTO Mode (A460 and A465) or Stationary Variable PTO Mode (A460 and A465), when engine speed exceeds 1200 RPM, the torque converter will lock up. The engine speed can not be modified and the lockup function cannot be turned off. Please note that with PTO applications that operate around 1200 RPM, the transmission software holds the torque converter in lockup until engine speed falls below 1100 RPM.

The lock up function will cancel if the transmission shift lever is moved from the park or neutral positions which will remove the transmission from the stationary mode.

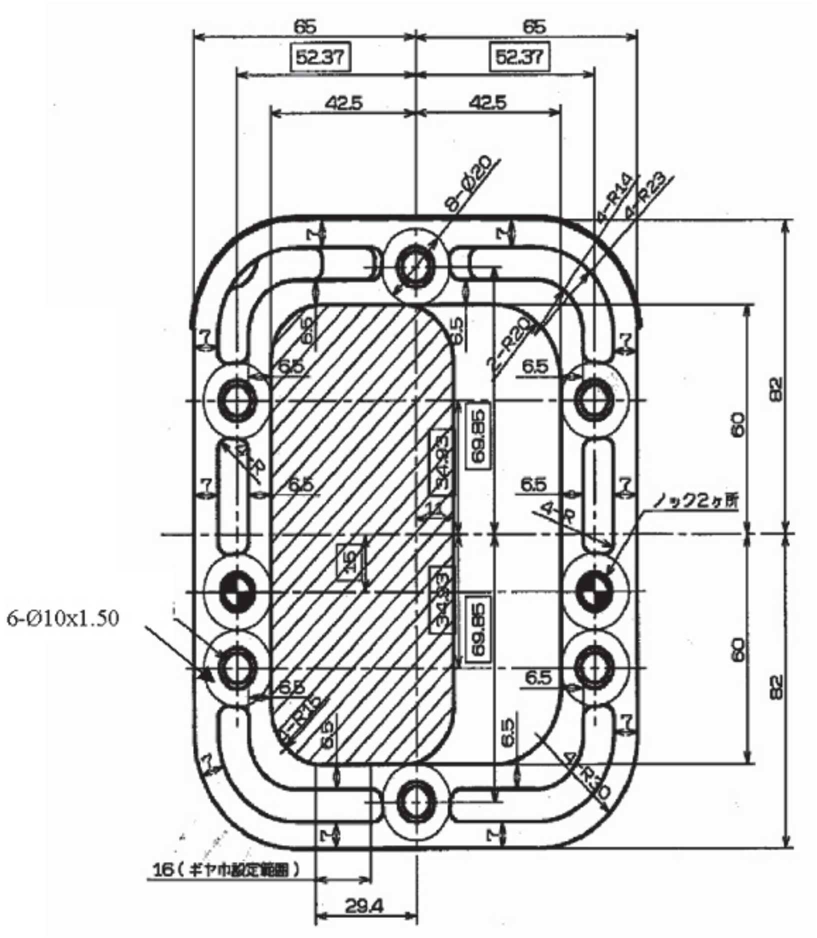

65
65
52.37
52.37
42.5
42.5
8-Ø20
4-R14
4-R23
2-R20
6.5
7
82
60
34.93
69.85
15
ノック2ヶ所
6-Ø10x1.50
4-R15
4-R30
16（ギヤ巾設定範囲）
29.4

Figure 16

PTO Location, Drive Gear, and Opening Information - Aisin A465 and A465id

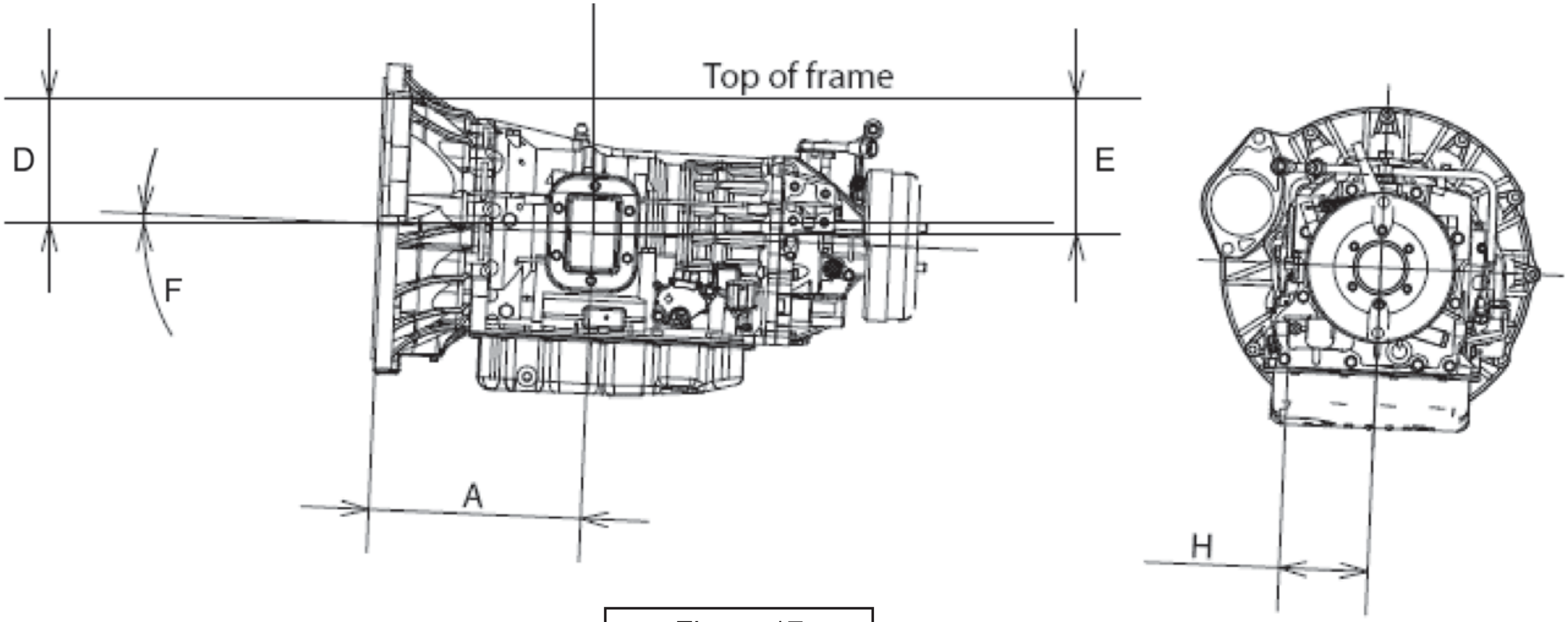


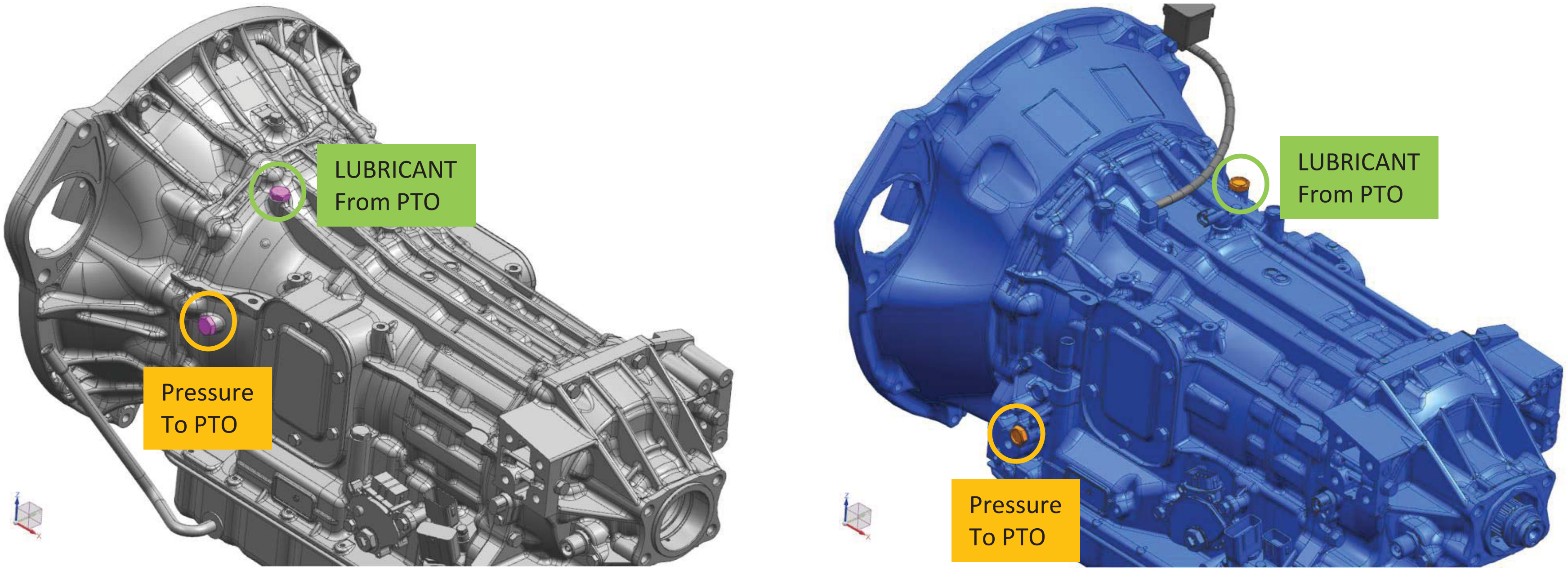
Figure 17

Transmission	Opening Location	Bolt Pattern	A	B_1	C	D	E	F	H	PTO Drive Gear	Ratio of PTO Drive Gear Speed to Engine Speed	Number of Teeth	Pitch	Helix Angle	Max Output Torque
Aisin A465	Left	(Dr 2)	12.4	36.9	0	7.85	7.31	2.5º	5.16	PTO Gear	1:1 with turbine	69	N/A	0º	134 lbs-ft @ 1700 RPM
Aisin A465id	Left	(Dr 2)	12.4	36.9	0	7.37	7.88	2.5º	5.16	PTO Gear	1:1 with turbine	69	N/A	0º	134 lbs-ft @ 1700 RPM

Notes: 1. Centerline of PTO to centerline of front axle

Note: Dimensions in inches

PTO Pressure and Lubrication Port Comparision - Aisin
A465 vs A465id


LUBRICANT From PTO
Pressure To PTO
LUBRICANT From PTO
Pressure To PTO

A465

A465id

Figure 18

PTO Pressure and Lubrication Port Locations - Aisin A465id

Model Years: 2020-Present

PTO Specifications	
Line Pressure:	261 PSI (1.8 Mpa)
Fixing Torque:	Nominal: 15.5 ft-lb (21 Nm) 14.0 - 17.7 ft-lb (19 - 24 Nm)
PTO Mounting Bolt Fixing Torque:	Nominal: 19.5 ft-lb (26.5 Nm) 18.4 - 21.4 ft-lb (25 - 29 Nm)
Recommended Backlash:	0.0118 - 0.0177 in (0.3 - 0.45 mm)

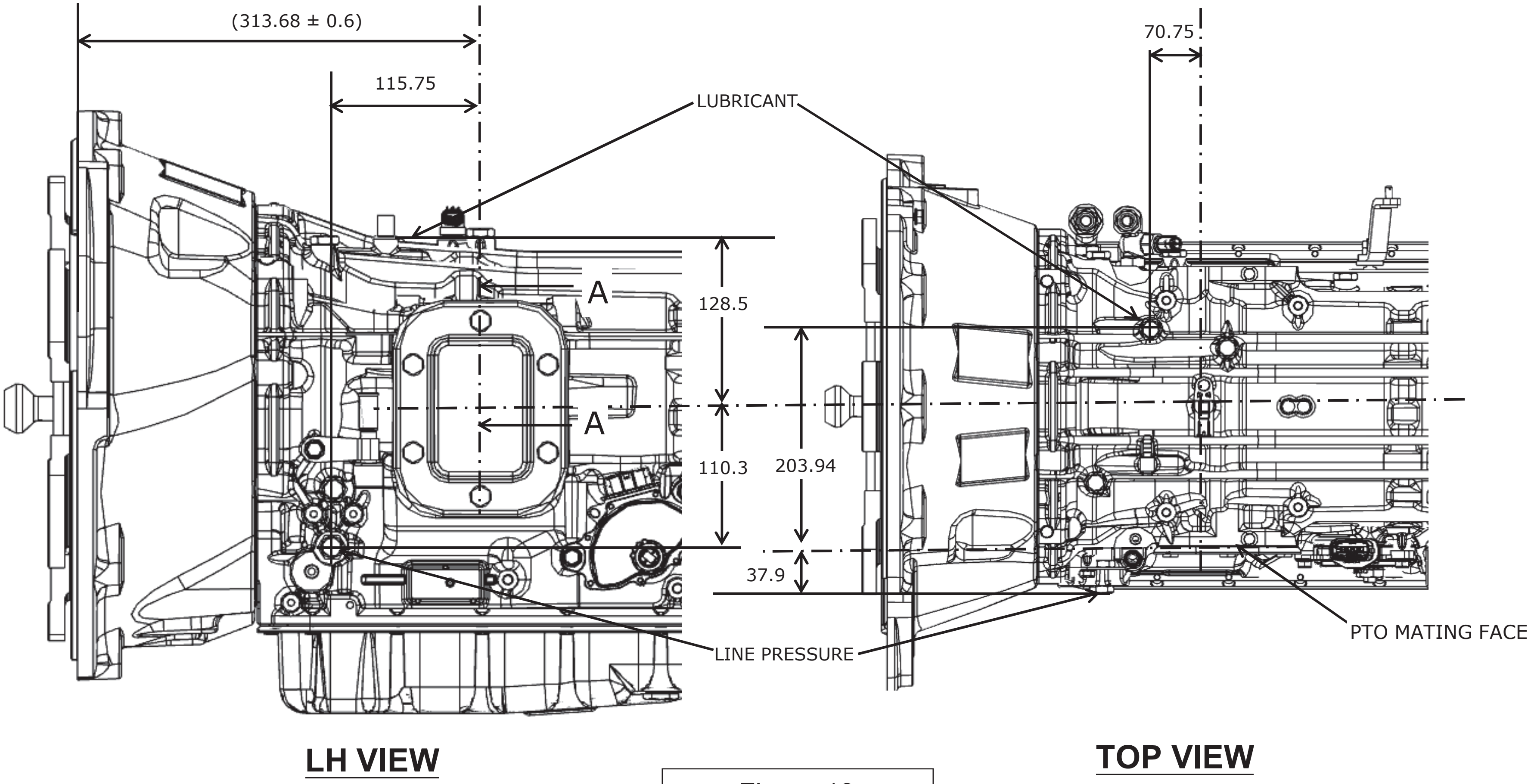

(313.68 ± 0.6)
115.75
70.75
LUBRICANT
A
A
128.5
110.3
203.94
37.9
LINE PRESSURE
PTO MATING FACE
LH VIEW
TOP VIEW

Figure 19

Transmission Opening Diagram - Aisin A465id

Aisin A465id Automatic Torque Converter Lock Up Function.

In either the Stationary Preset PTO Mode or Stationary Variable PTO Mode, when engine speed exceeds 1200 RPM, the torque converter will lock up. The engine speed can not be modified and the lockup function cannot be turned off. Please note that with PTO applications that operate around 1200 RPM, the transmission software holds the torque converter in lockup until engine speed falls below 1000 RPM.

The lock up function will cancel if the transmission shift lever is moved from the park or neutral positions which will remove the transmission from the stationary mode.

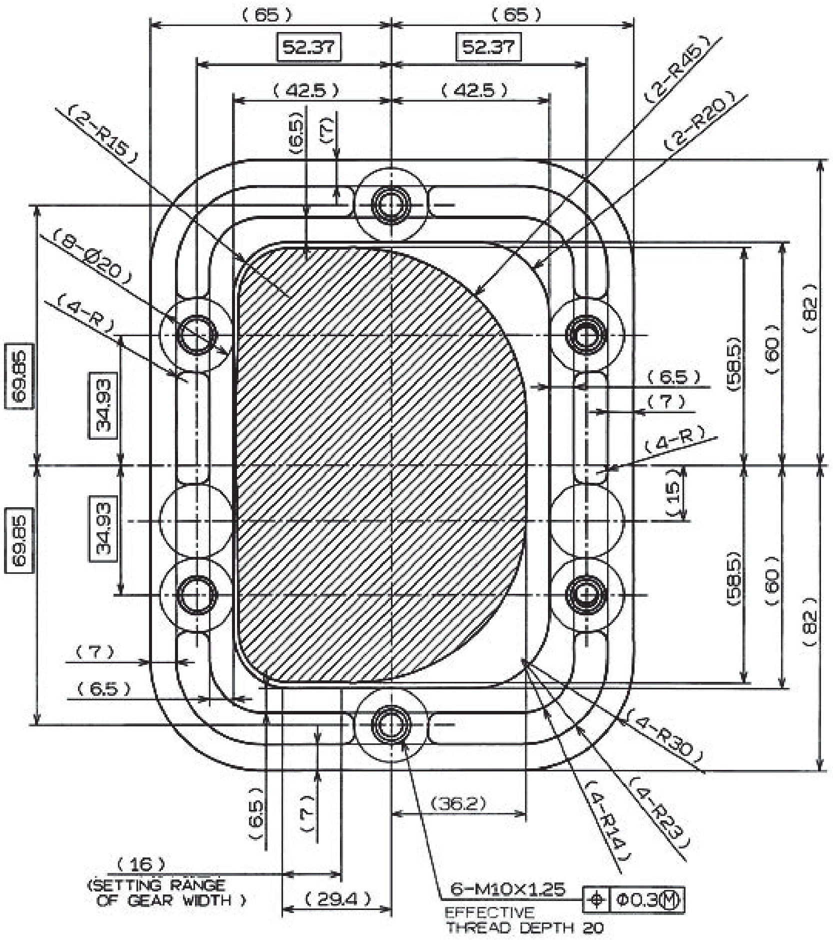

(65)
(65)
52.37
52.37
(42.5)
(42.5)
(6.5)
(7)
(2-R15)
(2-R45)
(2-R20)
(8-Ø20)
(4-R)
69.85
69.85
34.93
34.93
(58.5)
(60)
(82)
(58.5)
(60)
(82)
(6.5)
(7)
(4-R)
(15)
(7)
(6.5)
(4-R30)
(4-R23)
(4-R14)
(6.5)
(7)
(36.2)
(16)
(SETTING RANGE OF GEAR WIDTH)
(29.4)
6-M10×1.25
⌖ Φ0.3Ⓜ
EFFECTIVE THREAD DEPTH 20

Figure 20

Power Take Off for Cummins 6500 & 7500 Trucks

The Chevrolet 6500 XD & 7600 XD has a variety of Power Take Off (PTO) functions designed to accommodate a range of vehicle applications. A PTO is a device used to provide engine power to auxiliary equipment directly from the engine or through the transmission. For details about specific PTO equipment operation, refer to the documentation provided by its manufacturer. Access to Cummins INSITE Electronic Service Tools will be necessary to modify programming functions that control the PTO feature. The following pages will cover the main topics shown below:

1. Types of PTO modes:
    a. Cab PTO
    b. Remote PTO
    c. Remote Station PTO
2. Remote Accelerator Engine Control
3. Overview of Programming Options
4. Wiring and Connector Diagrams

*Note: Not all engine calibrations within a model year support all modes. Check your specific engine calibration.

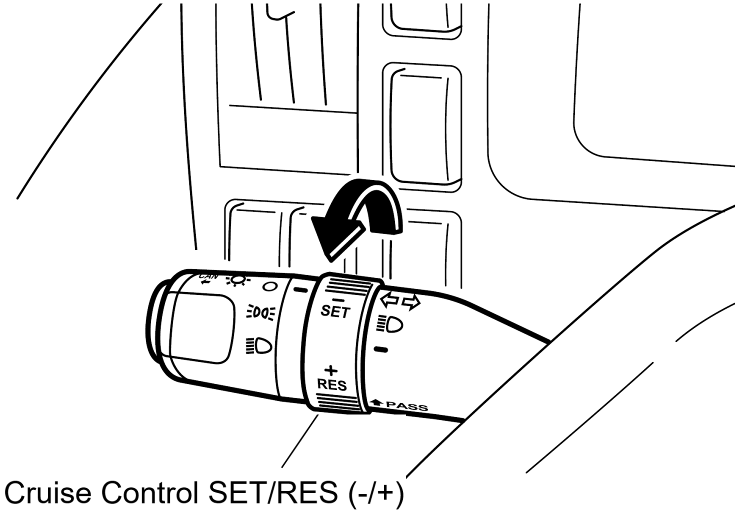
Introduction

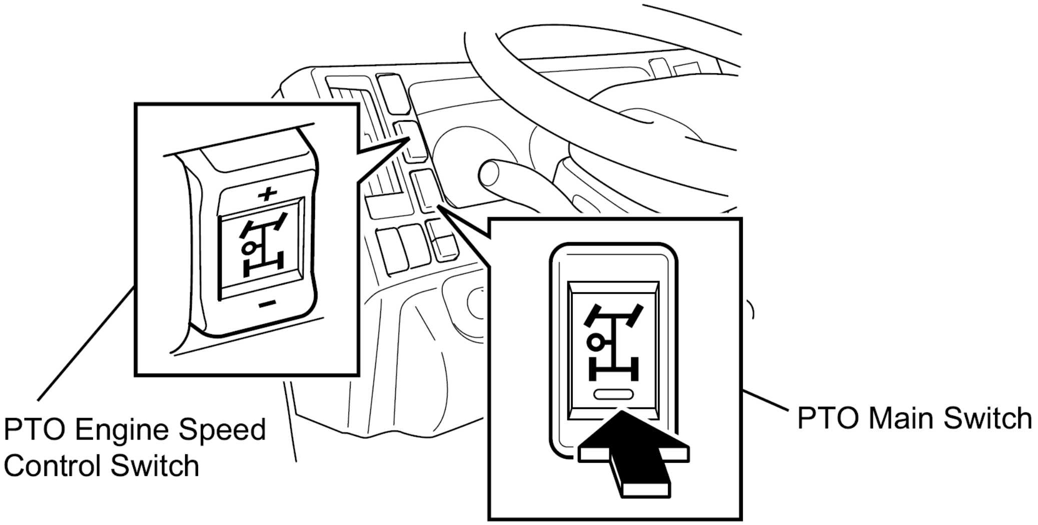
- The PTO feature is intended to maintain engine speed at an operator-selectable level, and is typically used to drive auxiliary equipment mounted to the vehicle.
- The PTO feature can be split into two types:
    - The “Cab” version of PTO is intended for operation in the vehicle cab.
    - The “Remote” versions of PTO are intended to be operated outside of the cab and take priority over Cab PTO if both (Cab and one of the Remote PTO modes) are enabled at the same time.
- The PTO feature can be controlled by either Cab PTO Switches or the Remote PTO Switch(es). The Cab PTO switches, and the traditional single Remote PTO Switch can be either hardwired or SAE J1939 Data Link multiplexed. The Remote Station PTO switches can only be hardwired.
    - Switches can be hardwired to the ECM or multiplexed (multiplexed devises added by the body builder must have source addresses that do not conflict with OEM equipment).

Cab PTO Controls

Optional dash mounted PTO controls integrate the PTO Main Switch and Engine Speed Control Switch into the cab. These Chevrolet supplied switches can be installed at a factory level if selected during chassis ordering, or they can also be purchased through Chevrolet dealer and easily integrated into the chassis wiring harness.

In PTO mode, Cruise Set/Resume Switch can be used exactly the same as PTO Engine Speed Control Switch. Improper operation of these switches may cause personal injury or damage.





Installation of PTO Switches

Parts

- (1) PTO Main Switch
- (1) PTO Engine Speed Adjustment Switch

Installation Instructions

1) Remove dash cover.
2) Remove two (2) hole covers (middle and bottom) from left side dash and remove harness connectors from hole cover
3) Insert PTO On/Off Switch in bottom slot and PTO Adjustment Switch in middle slot
4) Attach green connector to PTO switch and orange connector to PTO Adjustment Switch
5) Re-install dash panel

PTO Modes

Cab PTO Mode

- **Cab PTO** uses OEM installed Cruise Control / PTO switches to engage the engine at a preset speed from within the cab of the vehicle. There is also additional functionality when compared to the Remote PTO feature. Cab PTO has its own enable parameter that should be enabled to access its additional features.
    - Two speeds can be programmed (Set or Resume).
    - Alternate PTO – Allows engine speed to be ramped up from Idle speed and then ramped back down again. This helps eliminate jarring the driveline when engaging set speeds.

Remote PTO Modes - Remote PTO or Remote Station PTO

Any given vehicle can only have one remote PTO mode enabled at a time – Remote PTO *or* Remote Station PTO

- **Remote PTO** uses one switch to toggle between up to 5 speeds. In INSITE you can program up to 5 distinct target engine speeds
    - Each time the switch is toggled from ON-OFF-ON the engine will go to the next speed.
    - If at the 5th speed and the switch is toggled again the engine speed will match the 1st speed
- **Remote Station PTO -** can provide up to 3 pre-programmed speeds and engine speed ramping functionality.
    - Offers more functionality than the Remote PTO feature. Very similar to Cab PTO mode and duplicates the cab switches outside of the cab.
    - To use both the Cab PTO and the Remote Station PTO features on the same vehicle, the Cab PTO switches must be multiplexed. The Remote Station PTO switches must be hardwired to the ECM.
    - Set, Resume and Additional target speeds can be programmed in INSITE

Additional PTO Feature - Remote Accelerator

- Allows the use of a remotely mounted accelerator, potentiometer, hand throttle, or foot pedal.
- A toggle switch input is required at H104 PIN 6 in order to activate the remote accelerator.
- Up to two throttles can be used, and one or more can be multiplexed.
- **Must not be used to drive the vehicle on the road**

PTO Programming Overview

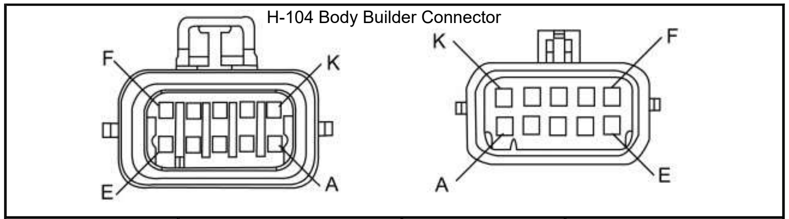
- Accelerator Pedal or Lever Override with Maximum Engine Speed
  - If this functionality is disabled, then any installed accelerator pedal or lever will be disabled.
  - If pedal override is desired, then set the Enable parameter to Enable and enter in the maximum engine speed allowed with the accelerator.
- Maximum Engine Load – Used to limit the engine torque in order to protect sensitive PTO pumps, etc.
- Maximum Speed – During PTO operation engine speed will not be allowed to exceed this speed.
- Maximum Vehicle Speed – During PTO operation if vehicle speed exceeds this value the PTO governor will disengage unless the parameter “Ignore Vehicle Speed Source in PTO” is enabled. This parameter will also not permit PTO to be engaged if vehicle speed is above this value.
- Minimum Speed – Minimum speed that PTO can command. If Low Speed Governor (LSG) has a higher setting, then engine speed will not drop below the LSG setting.
- Ramp Rate – Ramp rate used when first engaging PTO or when ramping up and down with Cab PTO. In order to ramp the engine speed PTO Speed Adjustment must be enabled. **This is a desired rate and physical limitations of the engine, especially due to emissions requirements, will impact the ramp rate.**
- Ignore Vehicle Source in PTO – When enabled the Maximum Vehicle Speed parameter will be ignored and so will Vehicle Speed Sensor faults. **If Transmission Driven PTO is enabled then this parameter must be set to Disable.**
- Parking Brake Interlock Type – This setting decides whether or not to allow PTO operations based on Parking Brake Position. There are 4 choices:
  - All – All PTO modes require Parking Brake engagement.
  - Cab Only – Only applies to Cab PTO mode, but does not apply to Remote PTO modes.
  - Remote Only - Only Remote PTO modes require Parking Brake engagement.
  - None – All PTO modes will ignore the Parking Brake.
- PTO Pump Mode – For applications where the vehicle’s main driveshaft is used to drive auxiliary equipment with the PTO feature engaged.
- PTO Speed Adjustment – When enabled it allows engine speed to be ramped up or down based on the customer selectable ramp rate.

PTO Programming Overview

- Remote PTO Service Brake and Clutch Override –This must be enabled for PTO Mode to be cancelled by Service Brake Pedal operation. **Service Brake Override must be set to enable in order to use this feature.**
- Transmission Driven PTO – Used for split shaft operations.
- Transmission Neutral Interlock – If enabled PTO will not operate unless the transmission is in Neutral.
- Zero Vehicle Speed Source Limit – If enabled engine speed is limited by the Maximum Engine Speed with Zero VSS which is set under Vehicle Speed Source.

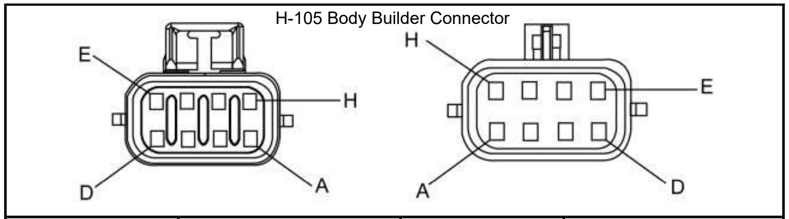
PTO Switch and Relay Harnesses H-104 & H-105

H-104 Body Builder Connector

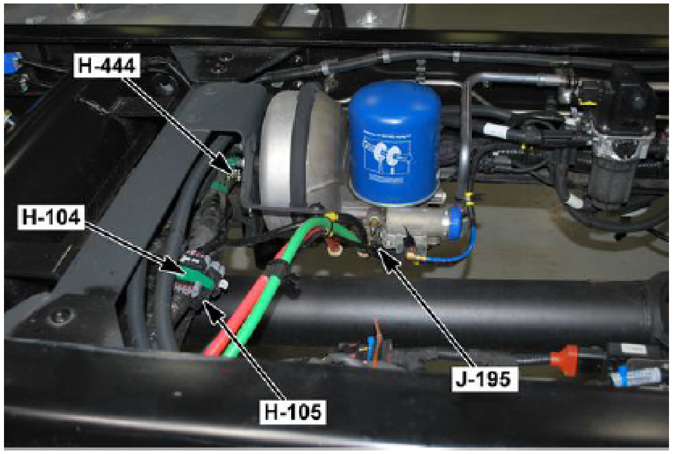


Connector Part Information		• Delphi 12065425 • 10-Way F (BLK)		Connector Part Information		• Delphi 12045808 • 10-Way M (BLK) • Body Builder Installed	
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
A	RED/BLK	IC180C	Ignition Voltage from Fuse F-18	A	—	—	—
B	RED/GRN	IC168C	Not Used	B	—	—	—
C	RED/BLU	IC166C	Not Used	C	—	—	—
D	GRY/RED	IC165C	Not Used	D	—	—	—
E	BRN	IC167C	PTO Remote Throttle Enable Switch	E	—	—	—
F	PNK/BLK	IC169C	PTO Remote Shut Down Switch Signal	F	—	—	—
G	WHT	WB051C	PTO Switch Signal to TCM	G	—	—	—
H	BLK	IZ007C	Ground to Splice 5 (J-7)	H	—	—	—
J	RED/GRN	IC171C	Not Used	J	—	—	—
K	RED/BLK	IC170C	Not Used	K	—	—	—

H-105 Body Builder Connector

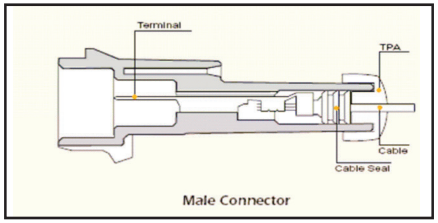


Connector Part Information		• Delphi 12047937 • 8-Way F (BLK)		Connector Part Information		• Delphi 1204931 • 8-Way M (BLK) • Body Builder Installed	
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
A	BLK/WHT	IC172C	PTO Engage Switch Signal	A	—	—	—
B	PNK/GRN	IC173C	Not Used	B	—	—	—
C	PNK	IC181C	Low Reference ECM	C	—	—	—
D	BLU/YEL	IC188C	Remote PTO Set Switch	D	—	—	—
E	BLU	IC037C	PTO Throttle Sensor Reference Voltage	E	—	—	—
F	YEL	IC038C	PTO Throttle Sensor Signal	F	—	—	—
G	BLU/RED	IC039C	PTO Throttle Sensor Low Reference	G	—	—	—
H	BLU/ORN	IC187C	Remote PTO Resume Switch	H	—	—	—



Connectors are located between the frame rails, on the crossmember next to the fuel tank.

Connector H104 - H105



Terminal

PN	Wide range
12045773	1.0-0.08 mm2
12077628	0.5-0.35 mm2

TPA

PN

12124264

included with connector

Cable Seats

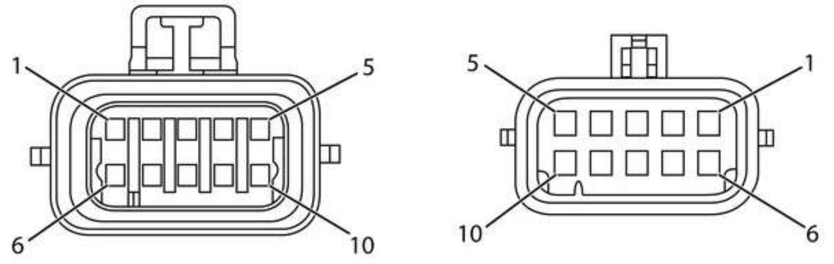
Loose PN	Wide range	Color
12048086	2.85-2.03	Dk.Red
12089678	2.15-1.60	White
12048087	1.70-1.29	Blue
12084193	1.009-0.995	Tan

Cavity Plug

PN	Cavity ID	Color
12059168	5.2mm	Dk.Red

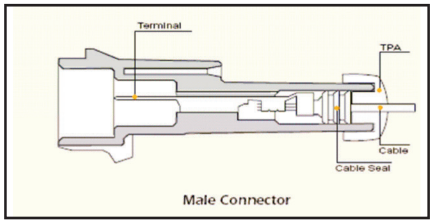
PTO Transmission Harness H-246

H-246 Body Builder Connector



Connector Part Information	- Delphi 12177081 - 10-Way F (BLK) - Letters stamped on connector body			Connector Part Information	- Delphi 12045808 - 10-Way M - Body Builder Installed - Letters stamped on connector body		
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
1 (F)	BRN	OA044C	Range Inhibitor Switch to TCM	1 (F)	—	—	—
2 (G)	—	—	Not Used	2 (G)	—	—	—
3 (H)	BLK	OA045C	Analog Sensor Signal Return to TCM	3 (H)	—	—	—
4 (J)	BLK	OA046C	Digital Return to TCM	4 (J)	—	—	—
5 (K)	LT BLU	OA047C	PTO Output to TCM	5 (K)	—	—	—
6 (E)	—	—	Not Used	6 (E)	—	—	—
7 (D)	—	—	Not Used	7 (D)	—	—	—
8 (C)	WHT	OA051C	PTO Switch to TCM and H-104 PTO Connector	8 (C)	—	—	—
9 (B)	PNK	OA041C	Auto Neutral to TCM	9 (B)	—	—	—
10 (A)	YEL	OA040C	Range Indicator to TCM	10 (A)	—	—	—

Connector H-246



Terminal

PN	Wide range
12045773	1.0-0.08 mm2
12077628	0.5-0.35 mm2

TPA

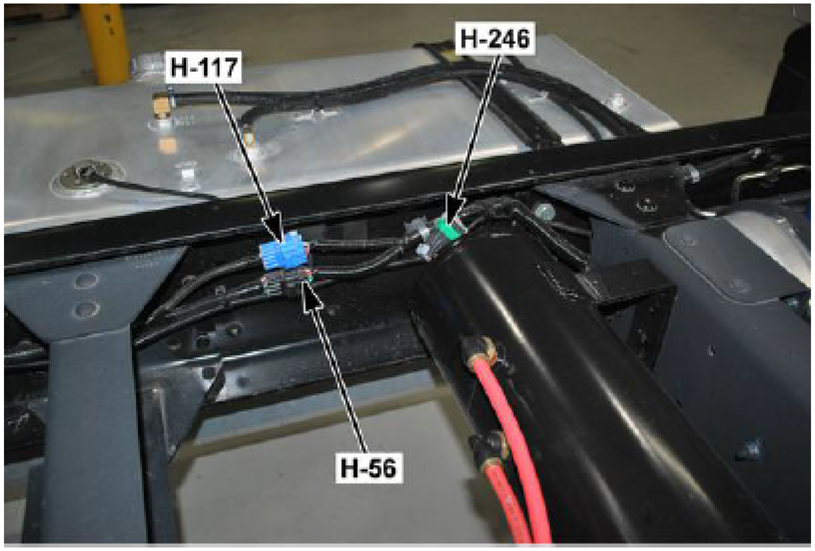
PN
12124264
included with connector

Cable Seats

Loose PN	Wide range	Color
12048086	2.85-2.03	Dk.Red
12089678	2.15-1.60	White
12048087	1.70-1.29	Blue
12084193	1.009-0.995	Tan

Cavity Plug

PN	Cavity ID	Color
12059168	5.2mm	Dk.Red



Connector is located within the frame rails, next to the fuel tank.

PTO Programming Overview

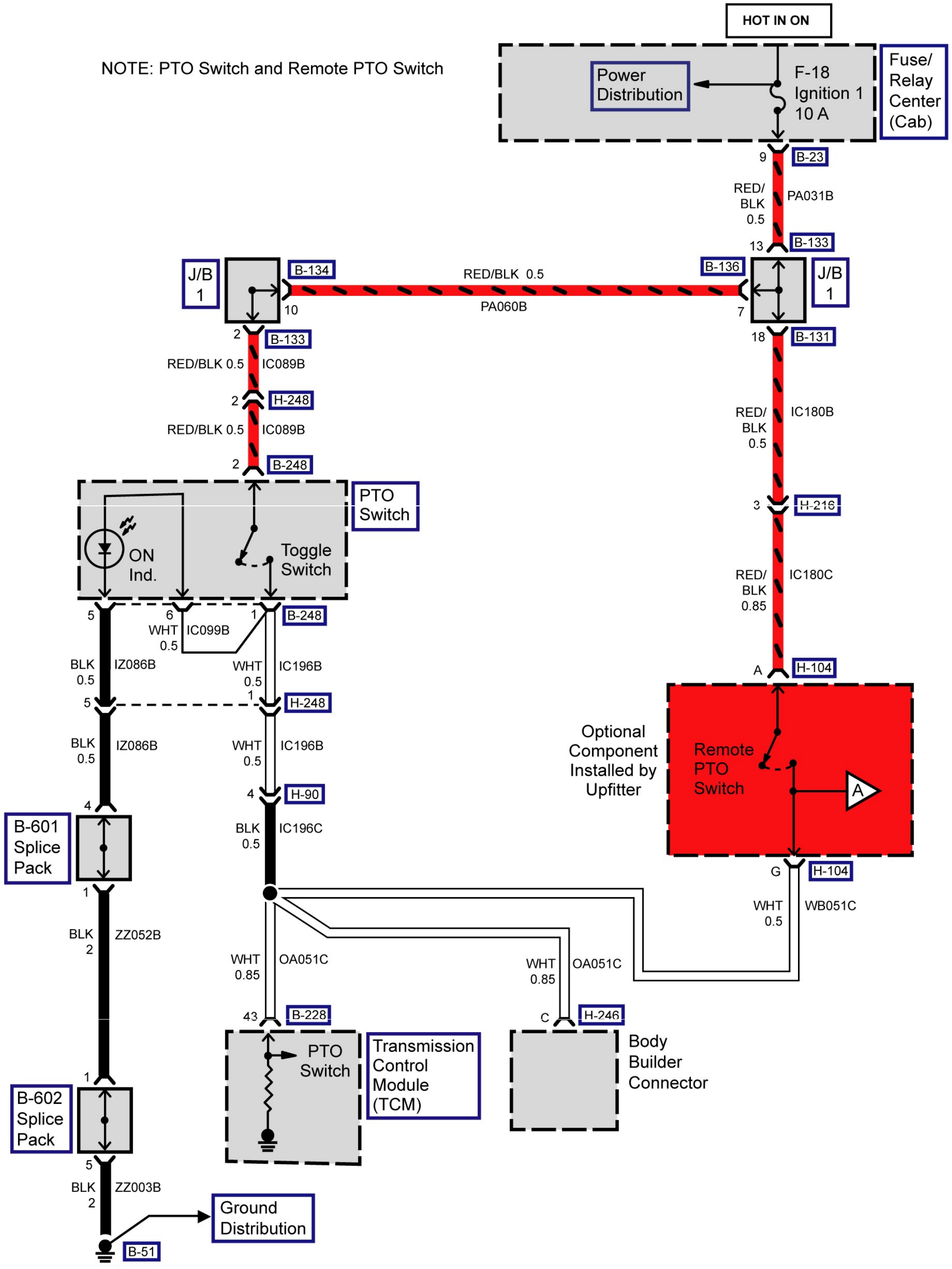
Parameter	Defaults	Unit	Range	Setting Criteria
PTO	Y	Y = Enable N = Disable	N or Y	Remote PTO and Remote Station PTO take priority over Cab PTO if both are enabled at the same time.
Cab PTO	Y	Y = Enable N = Disable	N or Y	Cab PTO cannot be enabled if PTO is disabled.
Remote PTO	Y	Y = Enable N = Disable	N or Y	Remote PTO cannot be enabled if PTO is disabled.
Remote Station PTO	N	Y = Enable N = Disable	N or Y	Remote Station PTO cannot be enabled if PTO is disabled.
Diesel Particulate Filter Regeneration Allowed in PTO and Other Modes	Y	Y = Enable N = Disable	N or Y	
Fast Idle Warmup PTO Load Threshold	10	%	Min: 0 Max: 50	Fast Idle Warmup PTO Load Threshold cannot be programmed if Fast Idle Warmup is disabled.
Idle Shutdown in PTO	Y	Y = Enable N = Disable	N or Y	Idle Shutdown in PTO cannot be enabled if Idle Shutdown is disabled. Idle Shutdown in PTO cannot be enabled if PTO is disabled.
PTO Set Switch Engine Speed	950	rpm	Min: 500 Max: 2600	PTO Set Switch Engine Speed cannot be programmed if PTO is disabled.
PTO Resume Switch Engine Speed	950	rpm	Min: 500 Max: 2600	PTO Resume Switch Engine Speed cannot be programmed if PTO is disabled.
PTO Additional Switch Engine Speed	950	rpm	Min: 500 Max: 2600	PTO Additional Switch Engine Speed cannot be programmed if PTO is disabled.
PTO Service Brake Override	Y	Y = Enable N = Disable	N or Y	PTO Service Brake Override cannot be enabled if PTO is disabled. PTO Service Brake Override cannot be enabled if Service Brake Switch is disabled. PTO Service Brake Override cannot be disabled if Transmission Type is set to Automated Without Clutch.
PTO Clutch Override	Y	Y = Enable N = Disable	N or Y	PTO Clutch Override cannot be enabled if PTO is disabled. PTO Clutch Override cannot be enabled if Clutch Switch is disabled.
PTO Speed Adjustment Enable	N	Y = Enable N = Disable	N or Y	Cannot be enabled if PTO Enable is Disabled
PTO Speed Adjustment Rate	50	rpm	Min: 25 Max: 1000	Cannot be enabled if PTO Enable is Disabled Cannot be enabled if PTO Speed Adjustment Enable is Disabled
Remote PTO Speed Setting 1	950	rpm	Min: 500 Max: 2600	Remote PTO Speed Setting 1 cannot be programmed if Remote PTO is disabled.
Remote PTO Speed Setting 2	950	rpm	Min: 500 Max: 2600	Remote PTO Speed Setting 2 cannot be programmed if Remote PTO is disabled.
Remote PTO Speed Setting 3	950	rpm	Min: 500 Max: 2600	Remote PTO Speed Setting 3 cannot be programmed if Remote PTO is disabled.
Remote PTO Speed Setting 4	950	rpm	Min: 500 Max: 2600	Remote PTO Speed Setting 4 cannot be programmed if Remote PTO is disabled.
Remote PTO Speed Setting 5	950	rpm	Min: 500 Max: 2600	Remote PTO Speed Setting 5 cannot be programmed if Remote PTO is disabled.
Remote PTO Number of Speed Settings	1	none	Min: 1 Max: 5	Remote PTO Number of Speed Settings cannot be programmed if Remote PTO is disabled.
Remote Station PTO Set Switch Engine Speed	950	rpm	Min: 500 Max: 2600	Remote Station PTO Set Engine Speed cannot be enabled if PTO is disabled.
Remote Station PTO Resume Switch Engine Speed	950	rpm	Min: 500 Max: 2600	Remote Station PTO Resume Engine Switch Engine Speed cannot be enabled if PTO is disabled.

PTO Programming Overview

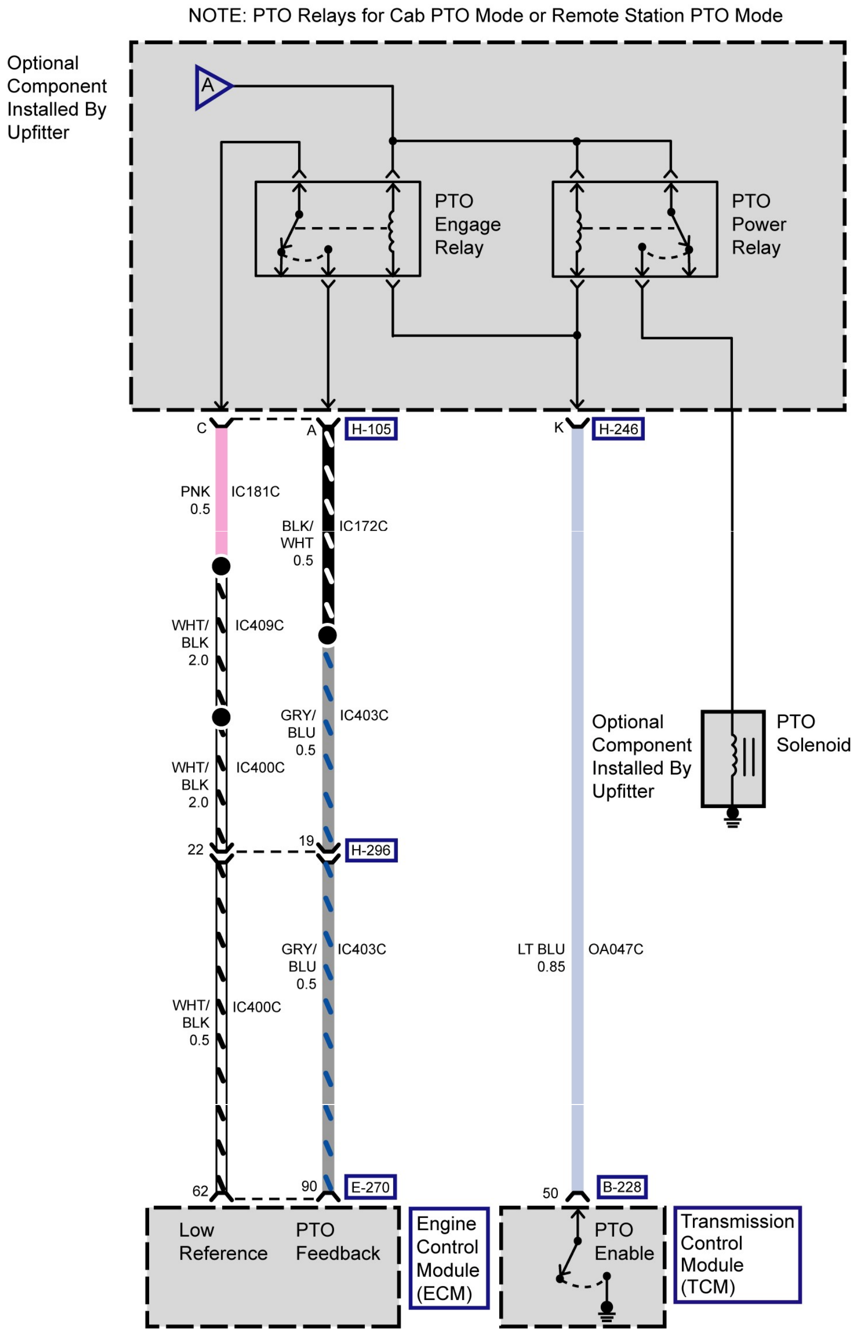
Parameter	Defaults	Unit	Range	Setting Criteria
Remote PTO Service Brake and Clutch Override	N	Y = Enable N = Disable	N or Y	Remote PTO Service Brake and Clutch Override cannot be enabled if PTO is disabled.
PTO Maximum Engine Speed	2400	rpm	Min: 500 Max: 2600	PTO Maximum Engine Speed cannot be programmed if PTO is disabled. PTO Maximum Engine Speed must be greater than or equal to PTO Minimum Engine Speed AND it must be less than or equal to PTO Accelerator Override Maximum Engine Speed.
PTO Minimum Engine Speed	700	rpm	Min: 500 Max: 2600	PTO Minimum Engine Speed cannot be programmed if PTO is disabled. PTO Minimum Engine Speed must be less than or equal to PTO Maximum Engine Speed.
PTO Maximum Vehicle Speed	9.66	km/h	Min: 0 Max: 48.3	PTO Maximum Vehicle Speed cannot be programmed if PTO is disabled.
PTO Maximum Engine Load	1084	Nm	Min: 0 Max: 1625	PTO Maximum Engine Load cannot be programmed if PTO is disabled.
PTO Engine Speed Ramp Rate	250	rpm/s	Min: 0.5 Max: 2500	PTO Engine Speed Ramp Rate cannot be programmed if PTO is disabled.
PTO Accelerator Override Maximum Engine Speed	3000	rpm	Min: 500 Max: 3000	PTO Accelerator Override Maximum Engine Speed cannot be programmed if PTO Accelerator Override is disabled.
PTO Accelerator Override	N	Y = Enable N = Disable	N or Y	PTO Accelerator Override cannot be enabled if PTO is disabled.
Ignore Vehicle Speed Source in PTO	N	Y = Enable N = Disable	N or Y	Ignore Vehicle Speed Source in PTO cannot be enabled if PTO is disabled. Ignore Vehicle Speed Source in PTO cannot be enabled if Transmission Driven PTO is enabled.
PTO Pump Mode	N	Y = Enable N = Disable	N or Y	PTO Pump Mode cannot be enabled if PTO is disabled.
PTO Pump Mode Maximum Vehicle Speed	0	km/h	Min: 0 Max: 24	PTO Pump Mode Maximum Vehicle Speed cannot be enabled if PTO is disabled.
PTO Pump Mode Vehicle Speed Sensor Override	Y	Y = Enable N = Disable	N or Y	PTO Pump Mode Vehicle Speed Sensor Override cannot be enabled if PTO is disabled.
PTO Transmission Neutral Interlock	N	Y = Enable N = Disable	N or Y	
PTO Parking Brake Interlock Type	0	n/a	Min: 0 Max: 3	0 = None; 1 = Cab Only; 2 = Remote Only; 3 = All
Remote Accelerator	N	Y = Enable N = Disable	N or Y	
Remote Accelerator Mode	1	n/a	0, 1, and 4	0 = Remote Accelerator Not Including Transition Verification; 1 = Remote Accelerator Including Transition Verification; 4 = Maximum Accelerator. Only remote accelerator modes; 0, 1, and 4 are supported at this time. Remote Accelerator Mode cannot be programmed if Remote Accelerator is disabled.
Transmission Driven PTO (split shaft) with Vehicle Speed Processing	N	Y = Enable N = Disable	N or Y	
Transmission Driven PTO (split shaft)	N	Y = Enable N = Disable	N or Y	Parking Brake Switch must be enabled when Transmission Driven PTO is enabled. Transmission Driven PTO cannot be enabled if Ignore Vehicle Speed Source in PTO is enabled.
Transmission Driven PTO Type (split shaft)	2	n/a	Min: 0 Max: 3	0 = Engine Driven - Steady Load; 1 = Transmission Driven - Steady Load; 2 = Transmission Driven - Irregular Load; 3 = Transmission Driven - Cyclic Load Transmission Driven PTO Type cannot be programmed if Transmission Driven PTO is set to disable.

PTO Switch 1 of 2

NOTE: PTO Switch and Remote PTO Switch


HOT IN ON
Power Distribution
F-18 Ignition 1 10 A
Fuse/ Relay Center (Cab)
9
B-23
RED/ BLK 0.5
PA031B
13
B-133
B-136
J/B 1
RED/BLK 0.5
PA060B
7
18
B-131
J/B 1
B-134
10
2
B-133
RED/BLK 0.5
IC089B
2
H-248
RED/BLK 0.5
IC089B
2
B-248
PTO Switch
ON Ind.
Toggle Switch
RED/ BLK 0.5
IC180B
3
H-216
RED/ BLK 0.85
IC180C
A
H-104
5
6
WHT 0.5
IC099B
1
B-248
BLK 0.5
IZ086B
WHT 0.5
IC196B
5
1
H-248
BLK 0.5
IZ086B
WHT 0.5
IC196B
4
H-90
4
B-601 Splice Pack
BLK 0.5
IC196C
1
BLK 2
ZZ052B
Optional Component Installed by Upfitter
Remote PTO Switch
A
G
H-104
WHT 0.5
WB051C
WHT 0.85
OA051C
WHT 0.85
OA051C
43
B-228
PTO Switch
Transmission Control Module (TCM)
C
H-246
Body Builder Connector
1
B-602 Splice Pack
5
BLK 2
ZZ003B
Ground Distribution
B-51

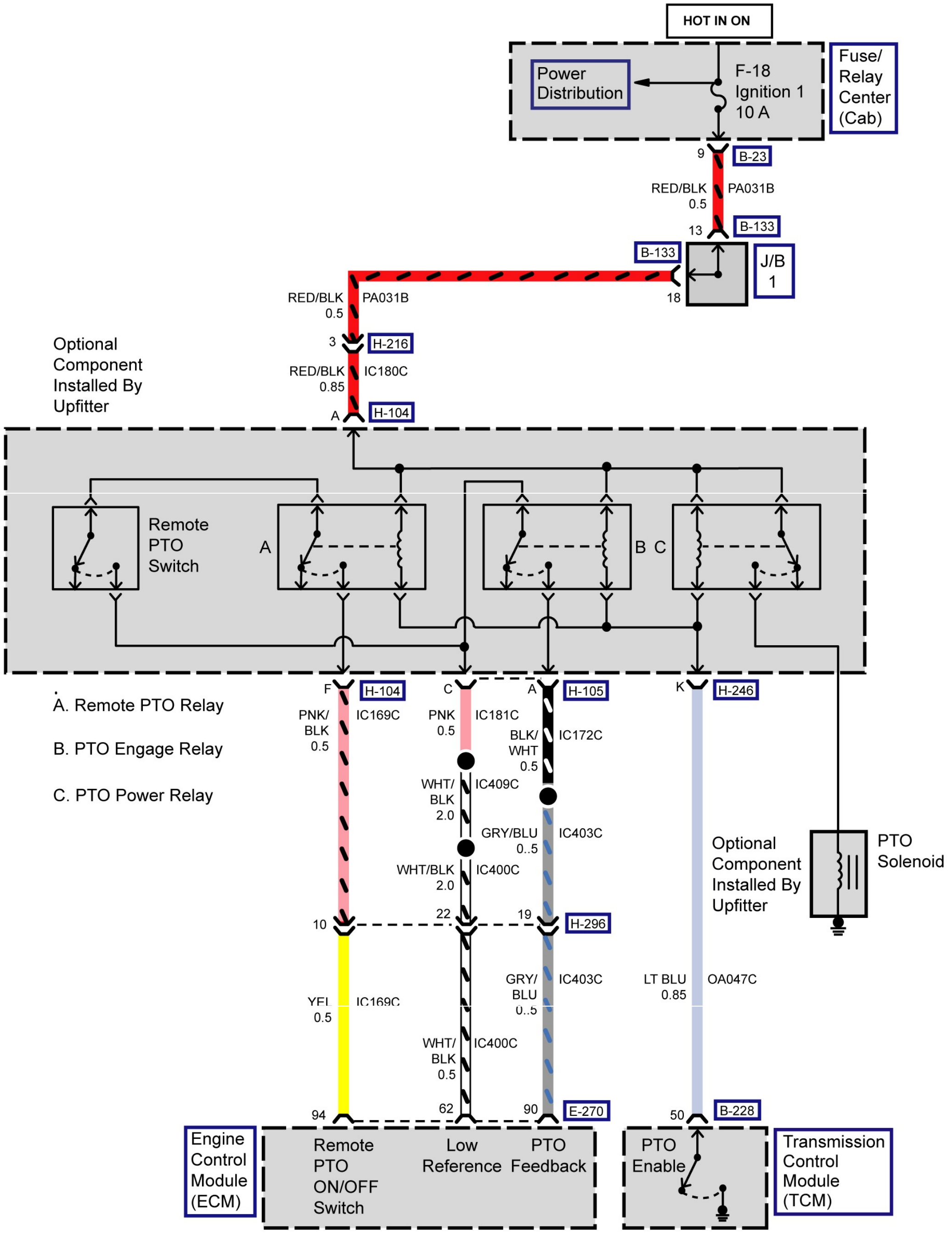
PTO Switch 2 of 2



NOTE: PTO Relays for Cab PTO Mode or Remote Station PTO Mode
Optional Component Installed By Upfitter
A
PTO Engage Relay
PTO Power Relay
C
A
H-105
K
H-246
PNK 0.5
IC181C
BLK/ WHT 0.5
IC172C
WHT/ BLK 2.0
IC409C
GRY/ BLU 0.5
IC403C
WHT/ BLK 2.0
IC400C
Optional Component Installed By Upfitter
PTO Solenoid
22
19
H-296
GRY/ BLU 0.5
IC403C
LT BLU 0.85
OA047C
WHT/ BLK 0.5
IC400C
62
90
E-270
50
B-228
Low Reference
PTO Feedback
Engine Control Module (ECM)
PTO Enable
Transmission Control Module (TCM)

2026 Chevrolet Low Cab Forward

PTO Remote Switch

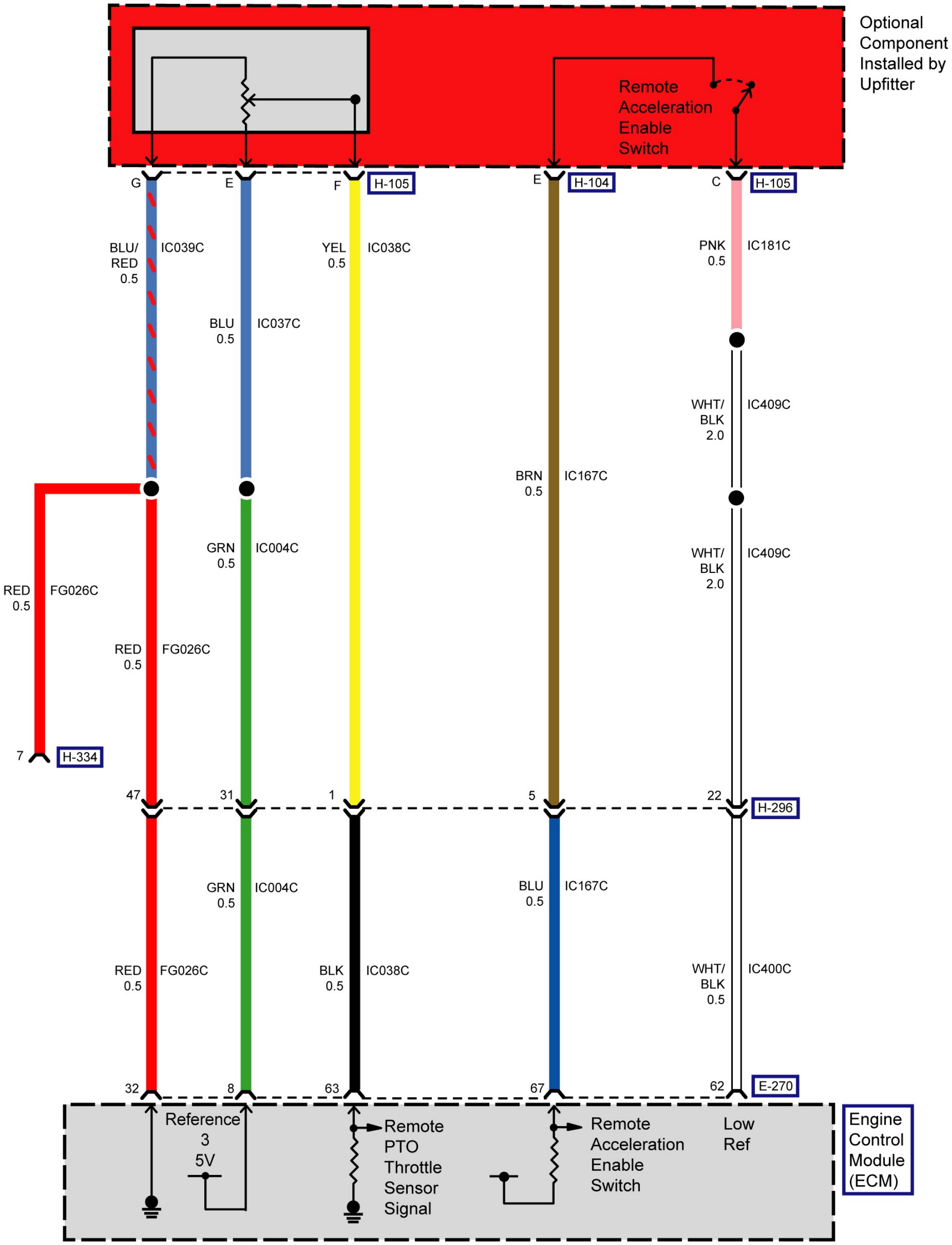

HOT IN ON
Power Distribution
F-18 Ignition 1 10 A
Fuse/ Relay Center (Cab)
9
B-23
RED/BLK 0.5
PA031B
13
B-133
B-133
J/B 1
18
RED/BLK 0.5
PA031B
3
H-216
RED/BLK 0.85
IC180C
A
H-104
Optional Component Installed By Upfitter
Remote PTO Switch
A
B C
F
H-104
C
A
H-105
K
H-246
PNK/ BLK 0.5
IC169C
PNK 0.5
IC181C
BLK/ WHT 0.5
IC172C
WHT/ BLK 2.0
IC409C
GRY/BLU 0..5
IC403C
WHT/BLK 2.0
IC400C
Optional Component Installed By Upfitter
PTO Solenoid
10
22
19
H-296
YEL 0.5
IC169C
GRY/ BLU 0..5
IC403C
LT BLU 0.85
OA047C
WHT/ BLK 0.5
IC400C
94
62
90
E-270
50
B-228
Engine Control Module (ECM)
Remote PTO ON/OFF Switch
Low Reference
PTO Feedback
PTO Enable
Transmission Control Module (TCM)

A. Remote PTO Relay

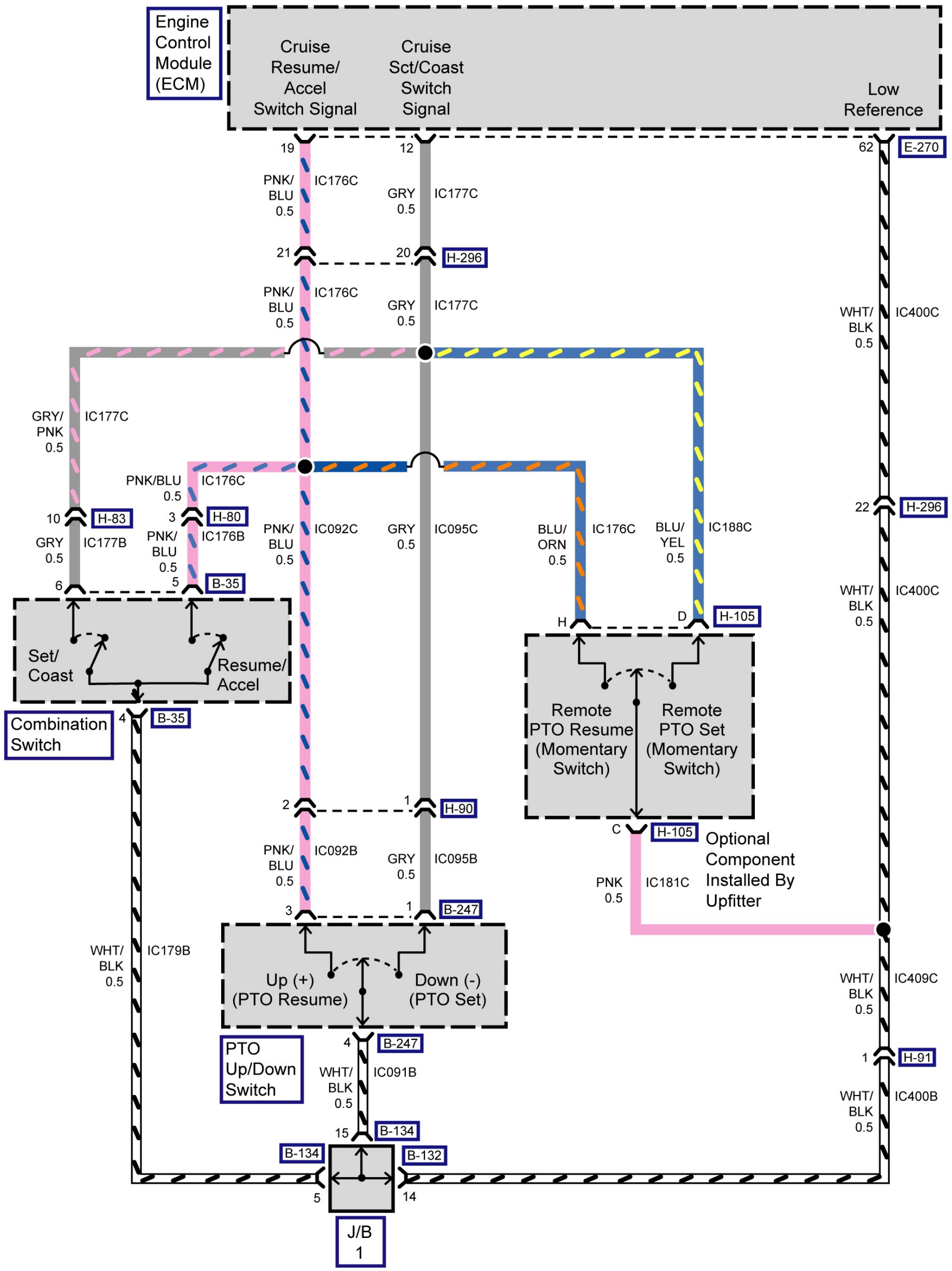
B. PTO Engage Relay

C. PTO Power Relay

Remote Accelerator

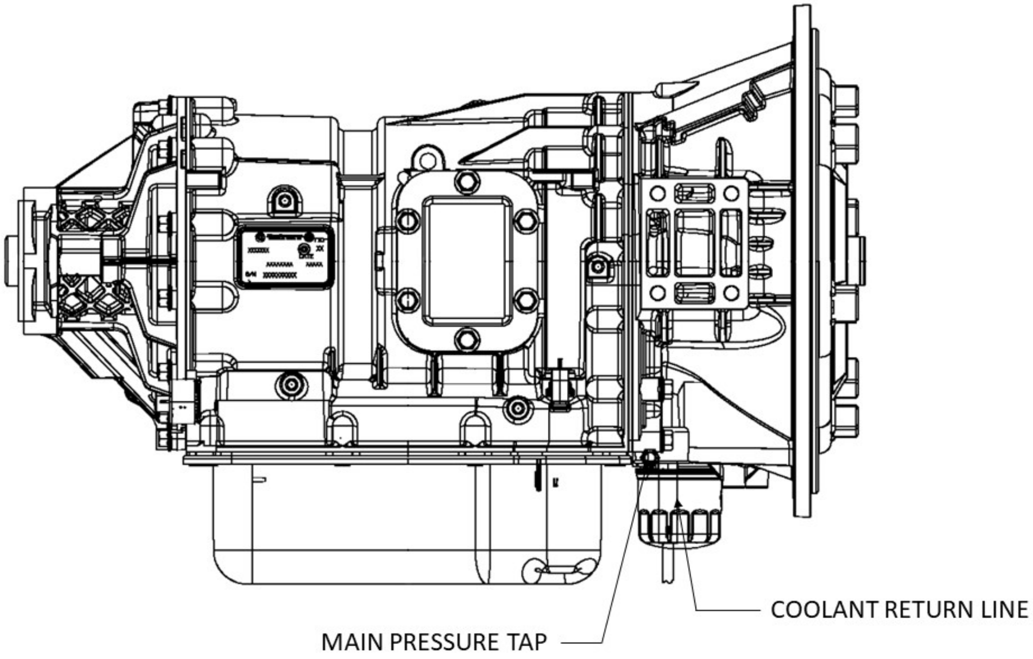

Optional
Component
Installed by
Upfitter
Remote
Acceleration
Enable
Switch
G
E
F
H-105
E
H-104
C
H-105
BLU/
RED
0.5
IC039C
BLU
0.5
IC037C
YEL
0.5
IC038C
BRN
0.5
IC167C
PNK
0.5
IC181C
WHT/
BLK
2.0
IC409C
WHT/
BLK
2.0
IC409C
RED
0.5
FG026C
RED
0.5
FG026C
GRN
0.5
IC004C
7
H-334
47
31
1
5
22
H-296
GRN
0.5
IC004C
BLU
0.5
IC167C
RED
0.5
FG026C
BLK
0.5
IC038C
WHT/
BLK
0.5
IC400C
32
8
63
67
62
E-270
Reference
3
5V
Remote
PTO
Throttle
Sensor
Signal
Remote
Acceleration
Enable
Switch
Low
Ref
Engine
Control
Module
(ECM)

PTO Set/Resume


Engine Control Module (ECM)
Cruise Resume/ Accel Switch Signal
Cruise Sct/Coast Switch Signal
Low Reference
19
12
62
E-270
PNK/ BLU 0.5
IC176C
GRY 0.5
IC177C
21
20
H-296
PNK/ BLU 0.5
IC176C
GRY 0.5
IC177C
WHT/ BLK 0.5
IC400C
GRY/ PNK 0.5
IC177C
PNK/BLU 0.5
IC176C
10
H-83
3
H-80
GRY 0.5
IC177B
PNK/ BLU 0.5
IC176B
6
5
B-35
PNK/ BLU 0.5
IC092C
GRY 0.5
IC095C
BLU/ ORN 0.5
IC176C
BLU/ YEL 0.5
IC188C
22
H-296
WHT/ BLK 0.5
IC400C
H
D
H-105
Set/ Coast
Resume/ Accel
Combination Switch
4
B-35
Remote PTO Resume (Momentary Switch)
Remote PTO Set (Momentary Switch)
C
H-105
Optional Component Installed By Upfitter
2
1
H-90
PNK/ BLU 0.5
IC092B
GRY 0.5
IC095B
PNK 0.5
IC181C
3
1
B-247
WHT/ BLK 0.5
IC179B
Up (+) (PTO Resume)
Down (-) (PTO Set)
WHT/ BLK 0.5
IC409C
PTO Up/Down Switch
4
B-247
WHT/ BLK 0.5
IC091B
1
H-91
WHT/ BLK 0.5
IC400B
15
B-134
B-134
B-132
5
14
J/B 1

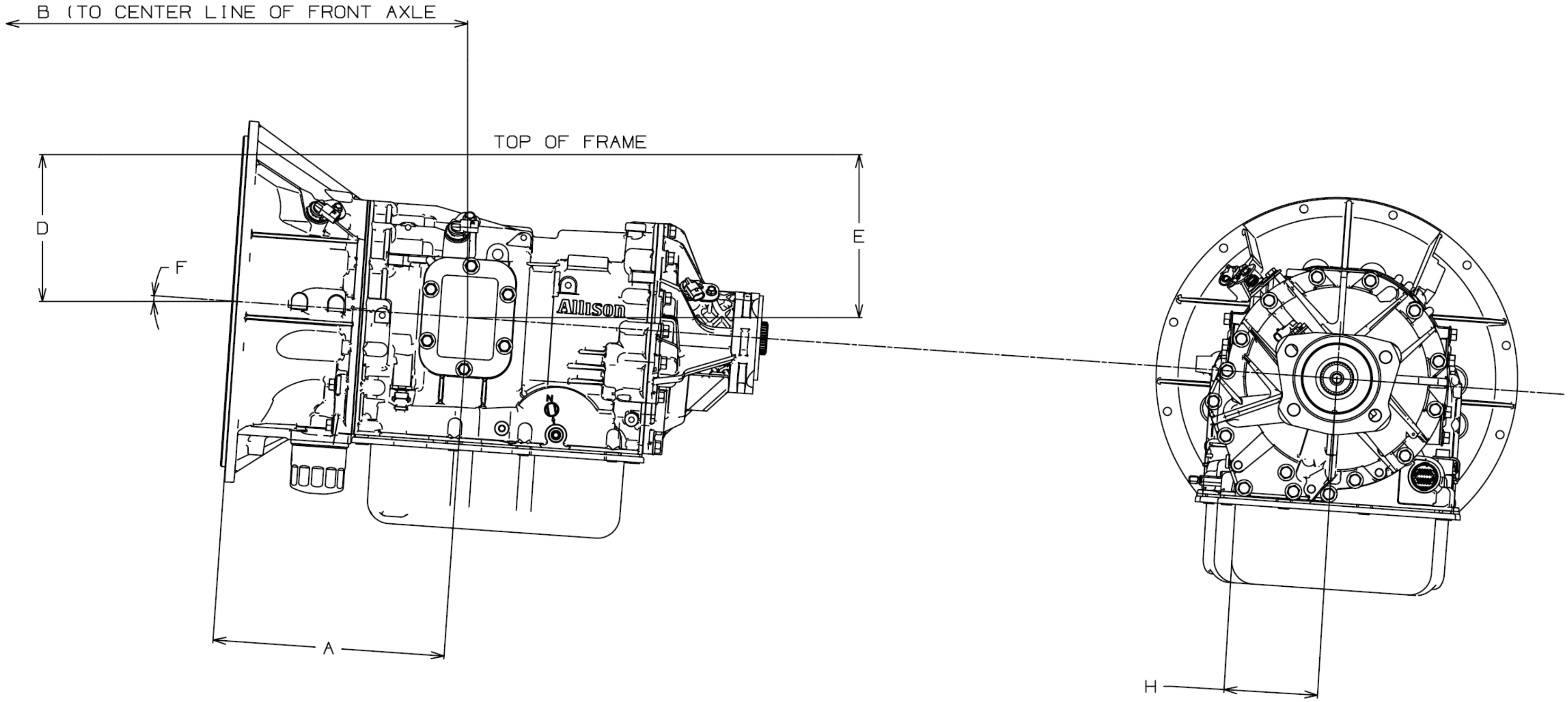
Transmission Model by Model Year and Vehicle Model

Transmission Model	Engine Model	Model Year	Chassis Model
Allison 2550 RDS	4HK1-TC	2018-2021	6500 HG
Allison 2550 RDS	B6.7	2022-Current	6500 HG
Allison 2500 RDS	B6.7	2022-Current	7500 XD & 7500 XD DR


COOLANT RETURN LINE
MAIN PRESSURE TAP

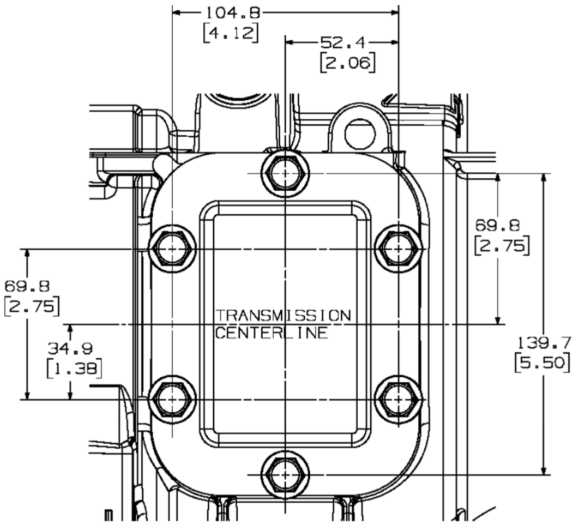
2026 Chevrolet Low Cab Forward

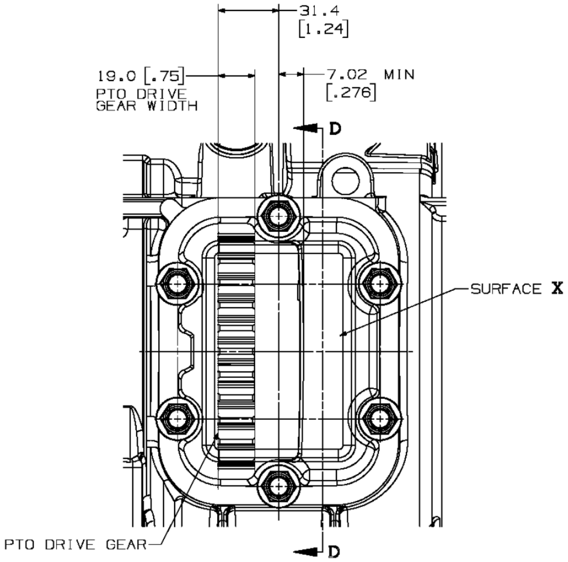
PTO Location, Drive Gear and Opening Information

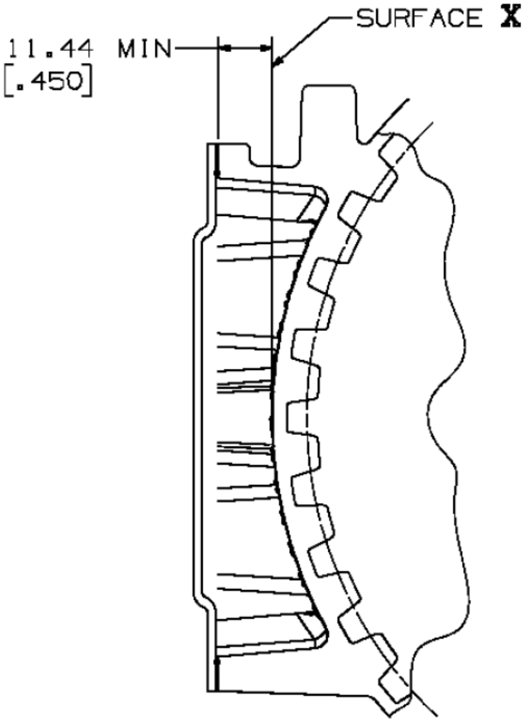

B (TO CENTER LINE OF FRONT AXLE
TOP OF FRAME
D
E
F
Allison
A
H

TRANSMISSION	OPENINING LOCATION	BOLT PATTERN	A	B	D	E	F	H	PTO DRIVE GEAR LOCATION	RATIO OF PTO DRIVE GEAR SPEED TO ENGINE SPEED	NUMBER OF TEETH	PITCH	MAX. OUTPUT TORQUE
ALLISON	LEFT	DR 2	12.33	31.18	7.81	8.67	4.0°	4.99	PTO GEAR	1:1 WITH TURBINE	64	6.865	250 LB-FT

PTO Opening Information


104.8
[4.12]
52.4
[2.06]
69.8
[2.75]
69.8
[2.75]
34.9
[1.38]
139.7
[5.50]
TRANSMISSION
CENTERLINE


31.4
[1.24]
19.0 [.75]
PTO DRIVE
GEAR WIDTH
7.02 MIN
[.276]
D
SURFACE X
PTO DRIVE GEAR
D


11.44 MIN
[.450]
SURFACE X

SECTION D-D

DOCUMENT FOR INCOMPLETE VEHICLE

APPLICABLE TO THE CHEVROLET 2025+ MY LCF

Isuzu Commercial Truck of America, Inc.
1400 S. Douglass Road, Suite 100 Anaheim, CA 92806

DO NOT REMOVE

THIS DOCUMENT MUST REMAIN WITH THIS VEHICLE UNTIL IT IS CERTIFIED AS A COMPLETED VEHICLE.

PLACE LABEL HERE

The Label affixed here includes the following information:

- The name of the incomplete vehicle manufacturer;
- The month and year the incomplete vehicle manufacturer performed its last manufacturing operation on the incomplete vehicle;
- The vehicle identification number (VIN);
- The Gross Vehicle Weight Rating (GVWR) expressed in kg (lb), intended for the vehicle when it is a completed vehicle;
- The Gross Axle Weight Rating (GAWR) expressed in kg (lb), intended for each axle of the vehicle when it is a completed vehicle, listed in order from front to rear
- Tire size, rim size, cold tire pressure.

This document is furnished as required by the Canada Motor Vehicle Safety Act (CVMSA) and United States (U.S.) Federal Motor Vehicle Safety Regulations (FMVSR) to aid intermediate and final stage manufacturers in their determination of conformity of the completed vehicle with applicable Canada Motor Vehicle Safety Standards (CMVSS), U.S. Federal Motor Vehicle Safety Standards (FMVSS), Canadian On-Road Vehicle and Engine Emission Regulations and Canada Interference Causing Equipment Standard - ICES-002. Also included are instructions, which must be followed in order to assure that U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB)* emission certification requirements and U.S. National Highway Traffic Safety Administration (NHTSA) Fuel Economy Regulations and Canada/U.S. EPA Greenhouse Gas Regulations are met.

The label attached to this document will indicate this vehicle was either manufactured by Isuzu Motors Limited, Japan or by Builtmore Contract Manufacturing US, a division of The SHYFT Group, Inc. under a contractual agreement with Isuzu. All inquiries regarding the content of this document should be forwarded to Chevrolet through the www.gmupfiter.com website.

This document is not a substitute for knowledge and understanding of the requirements of the Canada Motor Vehicle Safety Act, Federal Motor Vehicle Safety Regulations (FMVSR); or applicable Canada Motor Vehicle Safety Standards (CMVSS) and U.S. Federal Motor Vehicle Safety Standards (FMVSS). Intermediate and final stage manufacturers should be familiar with the Regulations and Standards referred to above to be aware of their specific responsibilities as they relate to the final destination and sale of each incomplete vehicle.

Any intermediate or final stage manufacturer making material alterations to this incomplete vehicle during the process of manufacturing the complete vehicle should be constantly vigilant to recognize all effects, either direct or indirect, on other components, assemblies or systems caused by any alteration. No alteration should be made to the incomplete vehicle that directly or indirectly results in any component, assembly or system being in nonconformance with any applicable Canada Motor Vehicle Safety Standard or U.S. Federal Motor Vehicle Safety Standard or Emission Regulation or Fuel Economy/Greenhouse Gas Regulation.

The statements contained in this Incomplete Vehide Document are accurate as of the date of manufacture of the Incomplete Vehicle and can be relied on by any intermediate and/or final stage manufacturer as a basis for certification.

*Please see the Vehicle Emission Control Information to identify if the vehicle is California certified.

INTRODUCTION

This document contains information relative to conformance of this incomplete vehicle with the following:

Part I - **U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND CANADA MOTOR VEHICLE SAFETY STANDARDS**

Part II - **U.S. EPA, CALIFORNIA, AND CANADA EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA/ NHTSA / CANADA GREENHOUSE GAS EMISSIONS/FUEL ECONOMY REGULATIONS**

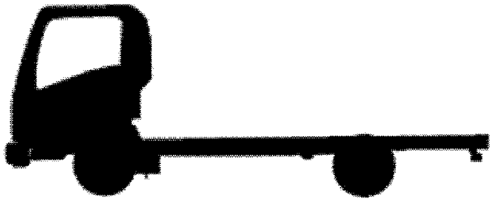
Part III - **CANADA INTERFERENCE CAUSING EQUIPMENT STANDARD**

This document pertains to the following styles of trucks: Diesel or Gasoline engine

Single cab model

MODEL

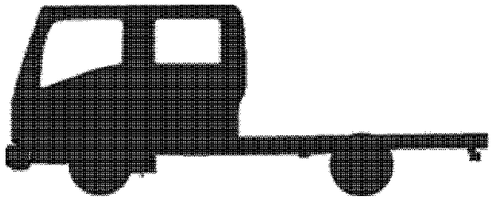
3500 HG
4500 HG
4500 XD
5500 HG
5500 XD



Crew cab model

MODEL

3500 HG
4500 HG
4500 XD
5500 HG
5500 XD



NOTE: Incomplete vehicle can be built into straight truck type vocational vehicles. It cannot be built into a Truck Tractor or Bus

***Emission Certification:**

To verify if this vehicle is certified to California emission standards, please locate the Vehicle Emission Control Information label generally located in the driver door area. The compliance statement on the label must say 'This vehicle complies with U.S. EPA and California regulations." If the label only states U.S EPA regulations, then the vehicle is not California certified.

PARTI

U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND CANADA MOTOR VEHICLE SAFETY STANDARDS

This section contains a list of Canada Motor Vehicle Safety Standard (CMVSS), and U.S. Federal Motor Vehicle Safety Standards (FMVSS), followed by a section entitled Statements Regarding Canada Motor Vehicle Safety Standards (CMVSS), and Federal Motor Vehicle Safety Standards (FMVSS). An appropriate statement of applicability is made for each standard, and by vehicle model as it relates to the incomplete vehicle.

The identifiers TYPE 1, TYPE 2 or TYPE 3 prefix statements (of applicability) regarding Canada Motor Vehicle Safety Standards {CMVSS), and Federal Motor Vehicle Safety Standards (FMVSS). "Examples" of these statements follow:

TYPE 1 A statement that the vehicle, when completed, will conform to the standard if no alterations are made in identified components of the incomplete vehicle. EXAMPLE: This vehicle when complete will conform to CMVSS 104 and FMVSS No. 104,. Windshield Wiping and Washing Systems, if no alterations are made in the windshield wiper components.

TYPE 2 A statement of specific conditions of final manufacture under which the manufacturer specifies that the completed vehicle will conform to the standard. EXAMPLE: This vehicle when completed will conform to CMVSS 121 and FMVSS 121, Air Brake Systems, if it does not exceed any of the gross axle weight ratings, if the center of gravity at GVWR is not higher than## feet above the ground, and if no alterations are made. to any brake system component.

TYPE 3 A statement that conformity with the standard cannot be determined based upon the components supplied on the incomplete vehicle, and that the incomplete vehicle manufacturer makes no representation to conformity with the standard.

In accordance with the requirements of Canada Motor Vehicle Safety Regulations, and Federal Motor Vehicle Safety Regulations Part 568.4, the following information is included on the label affixed to the front cover of this document:

- The name and mailing address of the incomplete vehicle manufacturer;
- The month and year the incomplete vehicle manufacturer performed its last manufacturing operation on the incomplete vehicle;
- The vehicle identification number (VIN);
- The Gross Vehicle Weight Rating (GVWR) expressed in kg (lb), intended for the vehicle when it is a completed vehicle;
- The Gross Axle Weight Rating (GAWR} expressed in kg (lb), intended for each axle of the vehicle when it is a completed vehicle, listed in order from front to rear.

In addition, the final stage manufacturer is responsible under Canada Motor Vehicle Safety Regulations, and Federal Motor Vehicle Safety Regulations and Part 567.5, to place the GVWR and the GAWR of each axle, on the Final Vehicle Certification Label. Required on label is the "Gross Vehicle Weight Rating" or "GVWR" followed by the appropriate value in kilograms and (pounds), which shall not be less than the sum of the unloaded vehicle weight, rated cargo load, and 68 kg (150 lb.) times the number of the vehicle's designated seating positions.

Unloaded Vehicle Weight means the weight of a vehicle with maximum capacity of all fluids necessary for operation of the vehicle, but without cargo or occupants or accessories that are ordinarily removed from the vehicle when they are not in use.

During the completion of this vehicle, GVWR and GAWR may be affected in various ways, including but not limited to the following:

- The installation of a body or equipment that exceeds the rated capacities of the incomplete vehicle.
- The addition of designated seating positions that exceed the rated capacities of the incomplete vehicle.
- Alterations or substitution of any components such as axles, springs, tires, wheels, frames, steering and brake systems that may affect the rated capacities of the incomplete vehicle.

PART I - CHART A

LIST OF CANADA MOTOR VEHICLE SAFETY STANDARDS (CMVSS), AND FEDERAL MOTOR VEHICLE SAFETY STANDARDS (FMVSS), APPLICABLE TO GASOLINE OR DIESEL FUELED TRUCKS WITH A GVWR OF GREATER THAN 4536 kg (10,000 lb)

SEE STATEMENTS REGARDING CMVSS AND FMVSS ON PAGES THAT FOLLOW

CMVSS	FMVSS	TITLE	LCF
CMVSR Sec 6-7	Part 567'"*	Labeling and Documentation Requirements	3
101	101	Controls and displays	1
102	102	Transmission shift lever sequence, starter interlock and transmission braking effect	1
103	103	Windshield defrosting and defogging systems	1
104	104	Windshield wiping and washing systems	1
105	105	Hydraulic brake systems	2
106	106	Brake hoses, Hydraulic, air and vacuum	1
108	-	Daytime Running Lights	2
108	108	Lamps, reflective devices and associated equipment	2
111	111	Mirrors and Rearview Visibility Systems	1
113	113	Hood Latch System	1
115	Part 565 **	Vehicle Identification Number	1
116	116	Motor-vehicle brake fluids	1
119	119	New pneumatic tires	1
120	120	Tire selection and rims	2
124	124	Accelerator control systems	1
-	125	Warning devices designed to be carried in motor vehicles	3
136	136	Electronic Stability Systems for Heavy Vehicles	3
205	205	Glazing materials	1
206	206	Door locks and door retention components	1
207	207	Seating systems	1
208	208	Occupant Crash Protection	1,3
209	209	Seat belt assemblies	1,3
210	210	Seat belt assembly anchorages	1,3
302	302	Flammability of interior materials	1
ICES-002	-	Canada interference causing equipment standard [PART III]	1
1106	40 CFR 202	Noise Emissions [PART II]	1

*** TYPE 1, 2 or 3 numbers to the right side of the table above designate the appropriate paragraph in the CMVSS or FMVSS standards that follow.**

**** CFR Title 49 Transportation Part 565, Part 567**

Statements Regarding Canada Motor Vehicle Safety Standards (CMVSS), ___and U.S._FederalJVlotor Vehide_Safety_Standards_{FIVIVSS).___

CMVSR SEC. 6 and 49 CFR 567 LABELING AND DOCUMENTATION REQUIREMENTS

Applies to all models of incomplete vehicles contained in this document

TYPE 3 The following statement is applicable to all models of Incomplete Vehicles contained in this document.

This incomplete vehicle, when completed in stages by an intermediate and final stage manufacturer will comply with the requirements of Part 567 or the CMVSR Section 6, when the intermediate and final stage manufactures provide additional labeling to meet these requirements. GM makes no representation as to conformity.

CMVSS 101 and FMVSS 101- CONTROLS AND DISPLAYS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of Incomplete Vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 101 and FMVSS 101 providing no alterations are made which affect the size, location, identification, or illumination of the controls and displays identified or the location, travel and type of driver's seat. If the driver's seat is installed by the intermediate or final stage manufacturer, the "H" point must be located as shown in the "Body Builder Manuals" and visibility and operation of the controls and displays listed below must meet the requirements of the standard.

The following controls must be operable, and the following displays for the following functions- and malfunctions shall be fitted in such a manner that they are identifiable, by the driver while the driver is seated in the driver's designated seating position with the driver's seat belt fastened around the driver in accordance with the manufacturer's instructions:

Hand operated controls (if equipped):

Automatic vehicle speed (cruise control)
Automatic transmission shift lever
Clearance lamps (switch)
Driver's Sunv1sor
Engine Idle Speed
Engine Start
Engine Stop
Hazard warning signal
Hazard warning switch
Headlamps
Headlamp high or low beam switch
Heating and air conditioning fan
Heating and air conditioning system
Horn control
Identification lamps (switch)
Ignition (switch)
Illumination intensity control
Master lighting switch
Position, side marker, end-outline marker, identification or clearance lamps
Service brake
Steering wheel
Tail lamps
Turn signal
Windshield defogging and defrosting systems
Windshield washer (washing system)
Windshield wiper (wiping system)

Foot operated controls (if equipped):

Accelerator
Park brake (pedal)
Service brake (pedal)

Displays (if equipped):

Air brake low pressure
Air bag system readiness
Antilock brake system malfunction
Battery charging condition
Brake lining wear-out condition
Brake system malfunction (*)
Brake failure warning
Electrical charge indicator
Engine oil pressure
Fuel level
Gross loss of brake pressure condition
Hazard warning signal
Engine coolant temperature display
Gear position
DPF (Diesel Particulate Filter) Gauge
Headlamp high beam
Low fuel indicator
Low brake air pressure telltale
Low brake fluid condition
Odometer(*)
Parking brake applied
Passenger air bag status
Seat belt (unfastened telltale)
Speedometer(*)
Transmission control position
Turn signal(s)
Variable brake proportioning system malfunction
Multi information display (MID)
DEF (Diesel Exhaust Fluid) Gauge

* For CMVSS only, when Canadian option is specified.

If the intermediate or final stage manufacturer installs any of the above controls and displays, those controls and displays will also have to meet the requirements of this standard.

CMVSS 102 and FMVSS 102 -TRANSMISSION SHIFT LEVER SEQUENCE, STARTER INTERLOCK AND TRANSMISSION BRAKING EFFECT

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all incomplete vehicle models contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 102 and FMVSS 102 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

Automatic Transmission (A/T) control and identification system,. including but not limited to:

A/T gear shift sequence and control logic (electrical or mechanical)
A/T steering column assembly
A/T control from floor shift mechanism to transmission linkage
A/T floor shift mechanism
A/T neutral safety switch assembly and wire
A/T position indicator dial
Brake - A/T interlock controls
Engine starter interlock controls
Vehicle & Chassis wiring harnesses
A/T position indicator (pointer}
A/T position indicator actuating linkage
Automatic transmission assembly
Transmission shift position p.attern (knob, plate or label)

CMVSS 103 and FMVSS 103 - WINDSHIELD DEFROSTING AND DEFOGGING SYSTEMS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all incomplete vehicle models contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 103 and FMVSS 103 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (ff equipped):

Windshield defrosting and defogging systems, including but not limited to:

- Chassis and instrument panel wiring harness assembly
- Defroster air distributor assembly (manifold)
- Defroster air duct assembly
- Defroster air hoses - manifold to nozzle
- Defroster air to windshield outlet assembly (nozzle)
- Defroster outlet to heater assembly adapter
- Engine water outlet thermostat assembly
- Heater & defroster assembly- including motor & blower
- Heater & defroster control (mechanical)
- Heater blower motor resistor assembly (blower speed control)
- Heater & water hoses and hose assemblies
- Heater water inlet valve control
- Windshield assembly

CMVSS 104 and FMVSS 104 -WINDSHIELD WIPING AND WASHER SYSTEMS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 104 and FMVSS 104 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

Windshield wiping and washing systems, including but not limited to:

- Chassis wiring harness
- Washer reservoir cap
- Water reservoir filler assembly
- Windshield assembly
- Windshield wiper arm assembly
- Windshield wiper blade assembly
- Windshield wiper linkage assembly
- Windshield wiper and washer control
- Windshield wiper and washer motor and pump assembly
- Windshield washer flUid reservoir
- Windshield washer system hoses
- Windshield washer nozzle

CMVSS 105 and FMVSS 105 - HYDRAULIC BRAKE SYSTEMS

Applies to all models of incomplete vehicles contained in this document

TYPE 2 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, if equipped with hydraulic brakes, when completed, will conform to CMVSS 105 and FMVSS 105 providing no alterations are made which affect the function, physical or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems identified below. In addition, the maximum vertical center of gravity specified below must not be exceeded at maximum GVWR and rated front and rear GAWR.

Application	Maximum Center of Gravity millimeter (inches) above ground
LCF Class 3,4,5	1600 mm (63")

Hydraulic Brake Systems, including but not limited to:

Hydraulic brake lines, fittings and routings including gauges, warning devices and warning statements
Hydraulic brake valves and components
Hydraulic brake reservoir
Service and/or parking brake assemblies and components
{Power boosters, master cylinder, ABS module, calipers, wheel cylinders, etc.)
Tires
Wheelbases
Brake pedal, brake light switch, parking brake hand level and switch, and related mechanical components
Brake and ABS warning light
Vacuum pump, tank, pipes and hoses (including warning devices and statements)
Master cylinder reservoir warning statement
Hydraulic booster pump, pipes, hoses and reservoir (including warning devices)

CMVSS 106 and FMVSS 106 - BRAKE HOSES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 106 and FMVSS 106 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Hydraulic Air, and Vacuum Brake Hoses
Hoses and hose end fittings
Labeling requirements

Brake Hose Assemblies - and Brake Hose End Fittings

CMVSS 108 - DAYTIME RUNNING LIGHTS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed will conform to the Daytime Running Lamps (DRL) requirements of CMVSS108 providing no alterations are made to the ignition switch, DRL system components or wiring, and any vehicle forward lighting as manufactured by Chevrolet.

CMVSS 108 and FMVSS 108 - LAMPS, REFLECTIVE DEVICES AND ASSOCIATED EQUIPMENT

Applies to all models of incomplete vehicles contained in this document

TYPE 2 The following statement is applicable to all models of incomplete vehicle.s contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 108 and FMVSS 108 providing it is completed in accordance with the following specific conditions by the final stage manufacturer:

1. Body width must be between 2.032 m (80") and 2.438 m (96"). (2.184 m (86") MIN Body Width For Crew Cab).

2. Each of these devices must be properly installed on the completed vehicle and meet all the requirements of CMVSS 108 and FMVSS 108:
   a. The following devices, when provided, located and/or wired by Chevrolet meet the requirements of this standard.
      Headlamps or Daytime running lamps
      Cab roof clearance and ID lamps {front)
      Side marker lamp (Front)
      Side reflex reflectors (front)
      Turn signal flasher
      Turn signal lamps (front)
      Turn signal operating unit
      Vehicle hazard warning signal operating unit
      Vehicle hazard warning signal flasher

   b. The following lamps and reflective devices are temporarily mounted on this incomplete vehicle as required for transportation. When relocating them, intermediate or final stage manufacturers must refer to the Chevrolet Body Builders Manual and assure conformance with the location, visibility, and operational requirements of CMVSS 108 and FMVSS 108.
      License plate lamp
      Rear combination lamps (tail lamps, stop lamps, turn signal lamps and back-up lamps)
      Reflex reflectors {rear)

   c. No part of the completed vehicle shall be installed so as to prevent any of the devices listed in (a) or (b) above from meeting their required photometric output at the specified test points. If such interference exists, the applicable devices may have to be relocated or additional devices added to meet the requirements of CMVSS 108 and FMVSS 108:
      Any CMVSS 108 and FMVSS 108 part shall not be painted.

d. The following devices are not installed on this incomplete vehicle or supplied by Chevrolet. When added by intermediate or final stage manufacturers, they must also meet the requirements of CMVSS 108 and FMVSS 108:
Clearance lamps (rear)
Identification lamps (rear)
Side reflex reflectors (rear)
Side marker lamps (rear)

e. The following additional devices must be installed on the van body and meet all requirements of this standard if the overall vehicle length is 9.1 m (30 feet) or greater.
Intermediate side marker lamps
Intermediate side reflex reflectors

3. No alterations (other than any relocation of Items in 2) b.) which may be necessary for conformance to CMVSS 108 and FMVSS 108 should be made which affect the location, mounting surfaces, function, environment or visibility clearance of the above listed devices which have been installed on this incomplete vehicle.

CMVSS 111 and FMVSS 111- REARVIEW MIRRORS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to FMVSS 111 providing no alterations or substitutions are made to the outside rearview mirrors, the driver's seat location is not altered, and the body is installed symmetrical about the vehicle centerline. The overall width should be no greater than;

Model	Width Limit millimeter (inches)	Width Limit with 102" wide mirror brackets millimeter (inches)
N-Series Class 3,4,5	2438 mm (96")	2590 mm (102")

CMVSS 113 and FMVSS 113 - HOOD LATCH SYSTEM

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to CMVSS 113 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped)

Hood
Hood Latch System

CMVSS 115 and 49 CFR 565 -VEHICLE IDENTIFICATION NUMBER

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 115 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Vehicle Identification Number (VIN)	VIN label or plate
	VIN plate fasteners

CMVSS 116 and FMVSS 116 - MOTOR VEHICLE BRAKE FLUIDS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document {unless otherwise noted on the cover).

This incomplete vehicle, when equipped with approved hydraulic brake fluid will conform to CMVSS 116 and FMVSS 116 providing no alterations are made which affect the physical or chemical properties of the brake fluid.

CMVSS 119 and FMVSS 119 - NEW PNEUMATIC TIRES FOR MOTOR VEHICLES WITH A GVWR OF MORE THAN 4,536 KILOGRAMS (10,000 POUNDS)

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS119 and FMVSS119 providing no alternation are made which affect the function, physical, chemical or mechanical properties, environment, location or vital spatial clearance of the components, assemblies or systems including but not limited to those listed below:

Tires	Wheels

CMVSS 120 and FMVSS 12.0 - TIRE SELECTION AND RIMS FOR VEHICLES OTHER THAN PASSENGER CARS

Applies to all models of incomplete vehi,cles contained in this document

TYPE 2 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 120 and FMVSS 120 provided:

A. No alterations are made which affect the function, physical or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to:

Owner Manual Instructions
Tires
Wheels

B. GVWR, GAWR front and rear weight ratings as listed on the incomplete vehicle label affixed to the front cover of this document are not exceeded.

C. The tire and wheel information shown on the incomplete vehicle label must be transferred to the final stage manufacturer's Certification label or Tire Information Label providing no equipment or tire pressure changes are made and the final stage manufacturer labels the vehicle in compliance with CMVSS 120 and FMVSS120.

NOTE: Incomplete Vehicles referenced in this document may be shipped with reduced tire pressures for shipping purposes only. Inflate tires to specified pressure before delivery to customers.

CMVSS 124 and FMVSS 124 - ACCELERATOR CONTROL SYSTEMS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

ThiS incomplete vehicle, when completed, will conform to CMVSS 124 and FMVSS 124 providing no alterations are made which affect the function, physical chemical, or mechanical properties, environment, location, or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Accelerator/throttle control systems, including but not limited to:

Accelerator pedal and attachments
Accelerator lever and supporting bracket assembly
Accelerator cable, support brackets, and seals
Accelerator return spring(s)
Attachment to injection pump lever - pin, hole, or ball stud
Downshift switch
Idling control cable assembly

FMVSS 125 -WARNING DEVICES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to FMVSS 125 providing no alterations are made which affect the function, physical chemical, or mechanical properties, environment, location, or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Warning devices (if equipped)

Safety warning triangles
Fire Extinguisher
Backup Alarm

CMVSS 136 and FMVSS 136 - ELECTRONIC STABILITY CONTROL SYSTEMS FOR HEAVY VEHICLES

Applies to all models of incomplete vehicles contained in this document

TYPE 3 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

Conformity with CMVSS 136 and FMVSS 136 cannot be determined upon the components supplied on the incomplete vehicle, and Chevrolet makes no representation to conformity with the standard.

This incomplete vehicle has not been built, tested, or manufactured with an electronic stability control system.

NOTE: ThiS incomplete vehicle cannot be built into a Truck Tractor.

CMVSS 205 and FMVSS 205 - GLAZING MATERIALS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 205 and FMVSS 205 providing no alterations are made which affect the function, physical chemical, or mechanical properties, environment, location, or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Glazrng material
Monogram
Driver's Side Reference Point {SgRP}
Visibility of the monogram
Windshield shade banding

Final compliance with CMVSS 205 and FMVSS 205 is the responsibility ofthe final stage manufacturer for any modifications, or added material, parts, components, or systems.

CMVSS. 206 and FMVSS 206 - DOOR LOCKS AND DOOR RETENTION COMPONENTS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to CMVSS 206 and FMVSS 206 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Door lock	Door hinge
Door latch	Inside lock control linkage
Door latch striker plate	Exterior door handles

Final compliance with CMVSS 206 and FMVSS 206 is the responsibility of the final stage manufacturer for any modifications, or added material, parts, components, or systems.

CMVSS 207 and FMVSS 207 -ANCHORAGE OF SEATS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unle.ss otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to CMVSS 207 and FMVSS 207 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Seating systems, including but not limited to:

Floor pan assemblies	Seat assembly
Folding seat or seat back latch assembly	Seat or seat back latch assembly
Seat adjuster assembly	Seat or seat back latch release control
Seat anchorage's brackets reinforcements, attachment hardware, etc.	Seat or seat back latch striker
	Seat riser

CMVSS 208 and FMVSS 208 - OCCUPANT CRASH PROTECTION

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document **(unless otherwise noted on the cover).**

This incomplete vehicle, when completed, will conform to the seat belt provision sections of CMVSS 208 and FMVSS 208 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems installed by Chevrolet including but not limited to:

Owner Manual Instructions
Seat anchorages
Seat assemblies
Seat belt anchorages
Location/configuration of designated seats
Seat belt assemblies
Seat belt warning system

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any seats, seat belt assemblies or seat belt assembly anchorages installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with CMVSS 208 and FMVSS 208 cannot be determined based upon the components supplied by intermediate or final stage manufacturer, and Chevrolet makes n.o representation to conformity with the standard.

CMVSS 209 and FMVSS 209 - SEAT BELT ASSEMBLIES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to the CMVSS 209 and FMVSS 209 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems installed by Chevrolet including but not limited to:

Owner Manual instructions
Seat anchorages
Seat ass.emblies
Seat belt anchorages
Location/configuration of designated seats
Seat belt assemblies
Seat belt warning system
Original attachment locations

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any seats, seat belt assemblies or seat belt assembly anchorages installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with CMVSS 209 and FMVSS 209 cannot be determined based upon the components supplied by intermediate or final stage manufacturer, and Chevrolet makes no representation to conformity with the standard.

CMVSS 210 and FMVSS 210-SEAT BELT ASSEMBLY ANCHORAGES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document {unless otherwise noted on the cover}.

This incomplete vehicle, when completed, will conform to CMVSS 210 and FMVSS 210 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Seat assemblies
Seat belt assemblies
Floor pan assembly
Seat belt routing
Seat position/adjustment capability
Owner Manual instructions
Seat belt anchorage brackets, plates, and reinforcements
Child restraint system including anchorages, brackets, plates and reinforcements
B or C pillar structures
Roof structure

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any seats, seat belt assemblies or seat belt assembly anchorages installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with CMVSS 210 and FMVSS 210 cannot be determined based upon the components supplied by intermediate or final stage manufacturer, and Chevrolet makes no representation to conformity with the standard.

CMVSS 302 and FMVSS 302- FLAMMABILITY OF INTERIOR MATERIALS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 302 and FMVSS 302 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below, and installed by Chevrolet:

Arm rests
Compartment shelves
Console
Engine compartment covers
Floor coverings
Head restraints
Headlining
Instrument panel
Rear Organizer
Seat assemblies
Seat backs
Seat belts
Seat cushions
Shades
Sun visors
Wheel housing covers

All trim panels including door, front, rear and side panels.

NOTE: This list above includes any other interior materials, such as padding and crash deployed elements that are designed to absorb energy on contact by occupants in the event of a crash

PARTII

U.S. EPA, CALIFORNIA, AND CANADA EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA/ NHTSA / CANADA GREENHOUSE GAS EMISSIONS /FUEL ECONOMY REGULATIONS

Incomplete vehicles come in three major classifications: (1) Light Duty Vehicles, Light Duty Trucks, and Heavy Duty Vehicles (Including Medium Duty in California} are certified by the primary manufacturer and the vehicle is labeled as being in compliance with emission and fuel economy requirements. (2) Heavy Duty Vehicles are required to have an engine certified by the engine manufacturer and bear an engine emissions label, and if a gasoline vehicle bear an evaporative emissions label. (3) Light Duty Vehicles certified and labeled by the intermediate or final stage vehicle manufacturer as complying with emission and fuel economy requirements.

The incomplete vehicles contained in this document are classified as Heavy Duty Vehicles. The final stage manufacturer is responsible to not exceed the GVWR and GAWR listed on the incomplete vehicle certification label and to apply a Final Vehicle Certification Label. If any of these restrictions are exceeded, re-certification by the final stage manufacturer will be required.

In addition, all gasoline/gasoline-ethanol blend powered Federal/Callfornia Light Duty, Medium Duty and Heavy Duty Vehicles are required to have an approved fuel evaporative emission control system. Vehicles certified to Heavy Duty gasoline emission standards also require special evaporative emission labeling. In order to assure that Environmental Protection Agency (EPA), National Highway Traffic Safety Administration {NHTSA), California and Canada Emission Certification and/or Greenhouse Gas/Fuel Economy regulations are met, this vehicle must be completed in strict accordance with all instructions contained in this document, especially the following instructions which relate to:

- EMISSION RELATED COMPONENTS
- EVAPORATIVE EMISSION REQUIREMENTS
- FUEL PIPE AND FUEL NECKS (CALIFORNIA)
- LABELS
- EXTERIOR NOISE

EMISSION RELATED COMPONENTS

EXHAUST AND EVAPORATIVE REQUIREMENTS.

TYPE 1 The following statement is applicable to all models of incomplete vehides contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, conforms to U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS providing no alterations are made which affect the function, physicat chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped), and installed by Chevrolet:

Air inlet system
Axles*2
Catalytic converter
Coolant temperature sensor
Crankcase emission control system
Engine assembly*2
Engine electronics (ECM/PCM/VCM)
Engine speed sensor
Exhaust system*2
Evaporative emission
    control system (t)*I
Fuel injection system
Fuel system*2
Ignition system (t)
Intake manifold
MAF Sensor

EGR system
Exhaust emission control system
Charge Air Cooler and related system
Exhaust oxygen sensors {if equipped)
Diesel Particulate Filter(tt)
Tires*2
Transmission Control Module (TCM)*2
A/C System (if equipped)
Owner Manual instructions
Selective Catalytic Reduction System(tt)

t Gasoline engine ttoiesel engine

***1** All Federal/California gasoline powered heavy duty vehicles will have an evaporative emission control system that is certified for a fuel tank capacity not to exceed the amount shown on Vehicle Evaporative Emission Control Information Label.

*2 All Federal certified heavy duty vehicles are required to meet Federal Green House Gas (GHG) requirements. Please check the Vehicle Emission Label located either on driver's side door or inside the engine compartment.

ORIGINAL TIRES for compliance to GHG requirements are described in the Owners Manual.

Refer to the Owners Manual for replacing of tires.

EXHAUST SYSTEM

TYPE 1 The following statement is applicable to all incomplete vehicle models contained in this document (unle.ss otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to 49 CFR Part 393.83 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems.

Vertical exhaust kit assembly provided by Chevrolet meets the Part 393.83 requirements, Chevrolet makes not statement of conformity with this standard for other vertical exhaust kits.

EVAPORATIVE EMISSION REQUIREMENTS.

TYPE 1 The following statement is applicable to all gasoline models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to applicable exhaust and evaporative emission requirements providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below, and installed by Chevrolet:

- Fuel Tank Assembly
- Fuel feed hoses front and rear
- Fuel return hoses front and rear
- Fuel tank filler hoses to filler neck
- Exhaust system
- Fuel tank vent hoses to filler neck
- Fuel vapor lines at canister
- Fuel vapor lines from engine to chassis pipes
- Fuel vapor lines from fuel tank sender to chassis pipes

SPECIFICATION FOR FILL PIPES AND OPENINGS OF MOTOR VEHICLE FUEL TANKS

(APPLICABLE ONLY TO CALIFORNIA GASOLINE/GASOLINE-ETHANOL BLEND POWERED VEHICLES)

TYPE 2 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to Title 13, California Code of Regulations Section 2235, and the "Specifications for Fill Pipes and Openings of 2015 and subsequent Model Year Motor Vehicle Fuel Tanks", dated March 22, 2012, providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the fuel filler neck(s) and any intermediate or final stage manufacturer completes the fuel filler neck installation(s) according to the instructions which are furnished in the loose parts box.

LABELS

TYPE 2 The following statement is applicable to all types of incomplete vehicles contained in this document {unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA/NHTSA GREENHOUSE GAS EMISSIONS/FUEL ECONOMY REGULATION labeling requirements providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the Emission Control related Information Labels that are permanently affixed. The labels are required by government regulation and must not be obstructed from view or defaced so as to impair their visibility or legibility.

EXTERIOR NOISE

CMVSS 1106 - EXTERIOR NOISE

Applies to all models of incomplete vehi.cles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to the above standards providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

Air Induction System (tuning elements)
Alternator
Axles/halfshafts/propshaft
Catalytic converter and its location
  {if equipped)
Engine assembly
Exhaust System
Exterior noise generating devices
Exterior rearview mirror assemblies
Front of dash sound deadening material
Hood assembly including sound deadening
  material and seals
Intake system (i.e. Air filter,
  Mass Air flow (MAF) sensor, ducts))
Power steering pump
Powertrain control and logic
Powertrain cooling fan and motor assemblies
Radiator/condenser assembly to body seals
Tires (including correct tire pressure)
Transmission/Transaxle assembly
Underbody shields including air deflector
Wheel house liners and shields

Final compliance with CMVSS 1106 is the responsibility of the final stage manufacturer for any modifications, or added material, components, or systems..

PART III

CANADA INTERFERENCE CAUSING EQUIPMENT STANDARD

INTERFERENCE CAUSING EQUIPMENT STANDARD (CANADA ONLY) - ICES-002

Applies to all models of Incomplete Vehicles contained in this document

TYPE 1 The following statement is applicable to all types of incomplete vehicles propelled by an internal combustion engine, electrical means or both contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to the performance requirements of the above standard provided no alterations made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Ignition wires & plugs
Ignition coil(s)
Low voltage battery
Charging system
Spark plug wires
ECM/TCM/PCM
BCM/SDM

Each vehicle propelled by an internal combustion engine, electrical means or both shall bear a bi-lingual label that represents the manufacturer's Self-Declaration of Compliance (SDoC) to Innovation, Science and Economic Development Canada ICES-002. This label shall be permanently affixed to the vehicle propelled by an internal combustion engine, electrical means or both or displayed electronically and its text must be clearly legible.

The final stage manufacturer must provide a statement of compliance on the Final Stage Manufacturer's Compliance Label or an additional label with the following bilingual information in order to comply with Industry Canada's Interference Causing Equipment Standard ICES/NMB-002:

ICES/NMB-002

DOCUMENT FOR INCOMPLETE VEHICLE

APPLICABLE TO THE CHEVROLET 2024+ MY LCF

Isuzu Commercial Truck of America, Inc.
1400 S. Douglass Road, Suite 100
Anaheim, CA 92806

DO NOT REMOVE

THIS DOCUMENT MUST REMAIN WITH THIS VEHICLE UNTIL IT IS CERTIFIED AS A COMPLETED VEHICLE.

PLACE LABEL HERE

The Label affixed here includes the following information:

- The name of the incomplete vehicle manufacturer;
- The month and year the incomplete vehicle manufacturer performed its last manufacturing operation on the incomplete vehicle;
- The vehicle identification number (VIN);
- The Gross Vehicle Weight Rating (GVWR) expressed in kg (lb), intended for the vehicle when it is a completed vehicle;
- The Gross Axle Weight Rating (GAWR) expressed in kg (lb), intended for each axle of the vehicle when it is a completed vehicle, listed in order from front to rear
- Tire size, rim size, cold tire pressure.

This document is furnished as required by the Canada Motor Vehicle Safety Act and United States (U.S.) Federal Motor Vehicle Safety Regulations (FMVSR) to aid intermediate and final stage manufacturers in their determination of conformity of the completed vehicle with applicable Canada Motor Vehicle Safety Standards (CMVSS), U.S. Federal Motor Vehicle Safety Standards (FMVSS), Canadian On-Road Vehicle and Engine Emission Regulations and Canada Interference Causing Equipment Standard – ICES-002. Also included are instructions, which must be followed in order to assure that U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB)* emission certification requirements and U.S. National Highway Traffic Safety Administration (NHTSA) Fuel Economy Regulations and Canada/U.S. EPA Greenhouse Gas Regulations are met.

This label attached to this document will indicate this vehicle was manufactured by Builtmore Contract Manufacturing, a division of The SHYFT Group, Inc under a contractual agreement with Chevrolet. All inquiries regarding the content of this document should be forwarded to Chevrolet through the www.gmupfitter.com website.

This document is not a substitute for knowledge and understanding of the requirements of the Canada Motor Vehicle Safety Act, Federal Motor Vehicle Safety Regulations (FMVSR); or applicable Canada Motor Vehicle Safety Standards (CMVSS) and U.S. Federal Motor Vehicle Safety Standards (FMVSS). Intermediate and final stage manufacturers should be familiar with the Regulations and Standards referred to above to be aware of their specific responsibilities as they relate to the final destination and sale of each incomplete vehicle.

Any intermediate or final stage manufacturer making material alterations to this incomplete vehicle during the process of manufacturing the complete vehicle should be constantly vigilant to recognize all effects, either direct or indirect, on other components, assemblies or systems caused by any alteration. No alteration should be made to the incomplete vehicle that directly or indirectly results in any component, assembly or system being in nonconformance with any applicable Canada Motor Vehicle Safety Standard or U.S. Federal Motor Vehicle Safety Standard or Emission Regulation or Fuel Economy/Greenhouse Gas Regulation.

The statements contained in this Incomplete Vehicle Document are accurate as of the date of manufacture of the Incomplete Vehicle and can be relied on by any intermediate and/or final stage manufacturer as a basis for certification.

*Please see the Vehicle Emission Control Information to identify if the vehicle is California certified.

INTRODUCTION

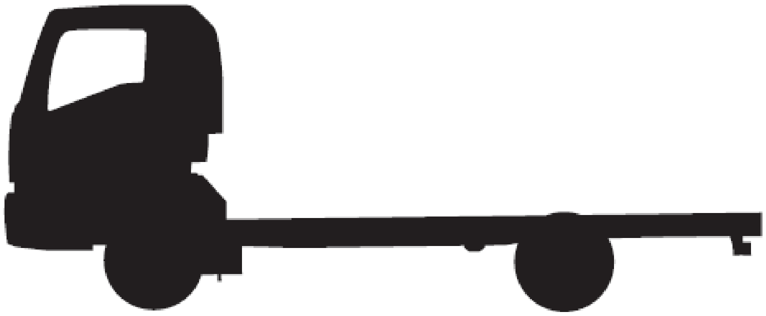
This document contains information relative to conformance of this incomplete vehicle with the following:

Part I – U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND CANADA MOTOR VEHICLE SAFETY STANDARDS

Part II – U.S. EPA, CALIFORNIA, AND CANADA EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA / NHTSA / CANADA GREENHOUSE GAS EMISSIONS/FUEL ECONOMY REGULATIONS

Part III – CANADA INTERFERENCE CAUSING EQUIPMENT STANDARD

This document pertains to the following styles of truck:

MODEL	
6500 XD 7500 XD	 4 × 2

**NOTE: Incomplete vehicle can be built into straight truck type vocational vehicles.
It cannot be built into a Truck Tractor**

*Emission Certification:

To verify if the incomplete vehicle is California emission certified, please locate the Vehicle Emission Control Information label generally located in the driver door area. The compliance statement on the label must say “This vehicle complies with U.S. EPA and California regulations.” If the label only states U.S. EPA regulations, then the vehicle is not California certified.

PART I

U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND CANADA MOTOR VEHICLE SAFETY STANDARDS

This section contains a list of Canada Motor Vehicle Safety Standard (CMVSS), and U.S. Federal Motor Vehicle Safety Standards (FMVSS), followed by a section entitled “Statements Regarding Canada Motor Vehicle Safety Standards (CMVSS), and Federal Motor Vehicle Safety Standards (FMVSS). An appropriate statement of applicability is made for each standard, and by vehicle model as it relates to the incomplete vehicle.

The identifiers TYPE 1, TYPE 2 or TYPE 3 prefix statements (of applicability) regarding Canada Motor Vehicle Safety Standards (CMVSS), and Federal Motor Vehicle Safety Standards (FMVSS). “Examples” of these statements follow:

TYPE 1 **A statement that the vehicle when completed will conform to the standard if no alterations are made in identified components of the incomplete vehicle. EXAMPLE: This vehicle when complete will conform to CMVSS 104 and FMVSS No. 104, Windshield Wiping and Washing Systems, if no alterations are made in the windshield wiper components.**

TYPE 2 **A statement of specific conditions of final manufacture under which the manufacturer specifies that the completed vehicle will conform to the standard. EXAMPLE: This vehicle when completed will conform to CMVSS 121 and FMVSS 121, Air Brake Systems, if it does not exceed any of the gross axle weight ratings, if the center of gravity at GVWR is not higher than ## feet above the ground, and if no alterations are made to any brake system component.**

TYPE 3 **A statement that conformity with the standard cannot be determined based upon the components supplied on the incomplete vehicle, and that the incomplete vehicle manufacturer makes no representation to conformity with the standard.**

In accordance with the requirements of Canada Motor Vehicle Safety Regulations, and Federal Motor Vehicle Safety Regulations Part 568.4, the following information is included on the label affixed to the front cover of this document:

- The name and mailing address of the incomplete vehicle manufacturer;
- The month and year the incomplete vehicle manufacturer performed its last manufacturing operation on the incomplete vehicle;
- The vehicle identification number (VIN);
- The Gross Vehicle Weight Rating (GVWR) expressed in kg (lb), intended for the vehicle when it is a completed vehicle;
- The Gross Axle Weight Rating (GAWR) expressed in kg (lb), intended for each axle of the vehicle when it is a completed vehicle, listed in order from front to rear.

In addition, the final stage manufacturer is responsible under Canada Motor Vehicle Safety Regulations, and Federal Motor Vehicle Safety Regulations and Part 567.5, to place the GVWR and the GAWR of each axle, on the Final Vehicle Certification Label. Required on label is the "Gross Vehicle Weight Rating" or "GVWR" followed by the appropriate value in kilograms and (pounds), which shall not be less than the sum of the unloaded vehicle weight, rated cargo load, and 68 kg (150 lb.) times the number of the vehicle's designated seating positions.

Unloaded Vehicle Weight means the weight of a vehicle with maximum capacity of all fluids necessary for operation of the vehicle, but without cargo or occupants or accessories that are ordinarily removed from the vehicle when they are not in use.

During the completion of this vehicle, GVWR and GAWR may be affected in various ways, including but not limited to the following:

- The installation of a body or equipment that exceeds the rated capacities of the incomplete vehicle.
- The addition of designated seating positions that exceed the rated capacities of the incomplete vehicle.
- Alterations or substitution of any components such as axles, springs, tires, wheels, frames, steering and brake systems that may affect the rated capacities of the incomplete vehicle.

PART I – CHART A

LIST OF CANADA MOTOR VEHICLE SAFETY STANDARDS (CMVSS), AND FEDERAL MOTOR VEHICLE SAFETY STANDARDS (FMVSS), APPLICABLE TO GASOLINE OR DIESEL – FUELED TRUCKS WITH A GVWR OF GREATER THAN 4536 kg (10,000 lb)

SEE STATEMENTS REGARDING CMVSS AND FMVSS ON PAGES THAT FOLLOW

CMVSS	FMVSS	TITLE	F*R
CMVSR Sec 6-7	Part 567**	Labeling and Documentation Requirements	3
101	101	Controls and displays	1
102	102	Transmission shift lever sequence, starter interlock and transmission braking effect	1
103	103	Windshield defrosting and defogging systems	1
104	104	Windshield wiping and washing systems	1
106	106	Brake hoses, Hydraulic, air and vacuum	1
108	-	Daytime Running Lights	2
108	108	Lamps, reflective devices and associated equipment	2
111	111	Mirrors and Rearview Visibility Systems	1
113	113	Hood Latch System	1
115	Part 565 **	Vehicle Identification Number	1
119	119	New pneumatic tires	1
120	120	Tire selection and rims	2
121	121	Air Brake Systems	1
124	124	Accelerator control systems	1
-	125	Warning devices designed to be carried in motor vehicles	3
136	136	Electronic Stability Systems for Heavy Vehicles	3
205	205	Glazing materials	1
206	206	Door locks and door retention components	1
207	207	Seating systems	1
208	208	Occupant Crash Protection	1,3
209	209	Seat belt assemblies	1,3
210	210	Seat belt assembly anchorages	1,3
302	302	Flammability of interior materials	1
ICES-002	-	Canada interference causing equipment standard [PART III]	1
1106	NA	Noise Emissions [PART II]	1

*** TYPE 1, 2 or 3 numbers to the right hand side of the table above designate the appropriate paragraph in the CMVSS or FMVSS standards that follow.**

**** CFR Title 49 Transportation Part 565, Part 567**

Statements Regarding Canada Motor Vehicle Safety Standards (CMVSS), and U.S. Federal Motor Vehicle Safety Standards (FMVSS).

CMVSR SEC. 6 and 49 CFR 567 LABELING AND DOCUMENTATION REQUIREMENTS

Applies to all models of incomplete vehicles contained in this document

TYPE 3 The following statement is applicable to all models of Incomplete Vehicles contained in this document.

This incomplete vehicle, when completed in stages by an intermediate and final stage manufacturer will comply with the requirements of Part 567 or the CMVSR Section 6, when the intermediate and final stage manufactures provide additional labeling to meet these requirements.

CMVSS 101 and FMVSS 101 – CONTROLS AND DISPLAYS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of Incomplete Vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 101 and FMVSS 101 providing no alterations are made which affect the size, location, identification, or illumination of the controls and displays identified or the location, travel and type of driver's seat. If the driver's seat is installed by the intermediate or final stage manufacturer, the "H" point must be located as shown in the "Body Builder Manuals" and visibility and operation of the controls and displays listed below must meet the requirements of the standard.

The following controls must be operable, and the following displays for the following functions and malfunctions shall be fitted in such a manner that they are identifiable, by the driver while the driver is seated in the driver's designated seating position with the driver's seat belt fastened around the driver in accordance with the manufacturer's instructions:

Hand operated controls (if equipped):

Automatic vehicle speed (cruise control)
Automatic transmission shift lever
Clearance lamps (switch)
Driver's Sunvisor
Engine Idle Speed
Engine Start
Engine Stop
Hazard warning signal
Hazard warning switch
Headlamps
Headlamp high or low beam switch
Heating and air conditioning fan
Heating and air conditioning system
Horn control
Identification lamps (switch)
Ignition (switch)
Illumination intensity control
Master lighting switch
Position, side marker, end-outline marker, identification or clearance lamps
Service brake
Steering wheel
Tail lamps
Turn signal
Windshield defogging and defrosting systems
Windshield washer (washing system)
Windshield wiper (wiping system)

Foot operated controls (if equipped):

- Accelerator
- Park brake (pedal)
- Service brake (pedal)

Displays (if equipped):

- Air brake low pressure
- Air bag system readiness
- Antilock brake system malfunction
- Battery charging condition
- Brake lining wear-out condition
- Brake system malfunction (*)
- Brake failure warning
- Diesel Particulate Filter Gauge
- Diesel Exhaust Fluid Gauge
- Electrical charge indicator
- Engine oil pressure
- Fuel level
- Gross loss of brake pressure condition
- Hazard warning signal
- Engine coolant temperature display
- Gear position
- Headlamp high beam
- Low fuel indicator
- Low brake air pressure telltale
- Low brake fluid condition
- Odometer (*)
- Parking brake applied
- Passenger air bag status
- Seat belt (unfastened telltale)
- Speedometer (*)
- Transmission control position
- Turn signal(s)
- Variable brake proportioning system malfunction
- Multi information display (MID)

* For CMVSS only, when Canadian option is specified.

If the intermediate or final stage manufacturer installs any of the above controls and displays, those controls and displays will also have to meet the requirements of this standard.

CMVSS 102 and FMVSS 102 – TRANSMISSION SHIFT LEVER SEQUENCE, STARTER INTERLOCK AND TRANSMISSION BRAKING EFFECT

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all incomplete vehicle models contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 102 and FMVSS 102 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

Automatic Transmission (A/T) control and identification system, including but not limited to:

- A/T gear shift sequence and control logic (electrical or mechanical)
- A/T steering column assembly
- A/T control from floor shift mechanism to transmission linkage
- A/T floor shift mechanism
- A/T neutral safety switch assembly and wire
- A/T position indicator dial
- Brake – A/T interlock controls
- Engine starter interlock controls
- Vehicle & Chassis wiring harnesses
- A/T position indicator (pointer)
- A/T position indicator actuating linkage
- Automatic transmission assembly
- Transmission shift position pattern (knob, plate or label)

CMVSS 103 and FMVSS 103 – WINDSHIELD DEFROSTING AND DEFOGGING SYSTEMS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all incomplete vehicle models contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 103 and FMVSS 103 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

Windshield defrosting and defogging systems, including but not limited to:

Chassis and instrument panel wiring harness assembly
Defroster air distributor assembly (manifold)
Defroster air duct assembly
Defroster air hoses – manifold to nozzle
Defroster air to windshield outlet assembly (nozzle)
Defroster outlet to heater assembly adapter
Engine water outlet thermostat assembly
Heater & defroster assembly – including motor & blower
Heater & defroster control (mechanical)
Heater blower motor resistor assembly (blower speed control)
Heater & water hoses and hose assemblies
Heater water inlet valve control
Windshield assembly

CMVSS 104 and FMVSS 104 – WINDSHIELD WIPING AND WASHER SYSTEMS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 104 and FMVSS 104 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

Windshield wiping and washing systems, including but not limited to:

Chassis wiring harness
Washer reservoir cap
Water reservoir filler assembly
Windshield assembly
Windshield wiper arm assembly
Windshield wiper blade assembly
Windshield wiper linkage assembly
Windshield wiper and washer control
Windshield wiper and washer motor and pump assembly
Windshield washer fluid reservoir
Windshield washer system hoses
Windshield washer nozzle

CMVSS 106 and FMVSS 106 – BRAKE HOSES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 106 and FMVSS 106 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Hydraulic Air, and Vacuum Brake Hoses
Hoses and hose end fittings
Labeling requirements
Brake Hose Assemblies – and Brake Hose End Fittings

CMVSS 108 – DAYTIME RUNNING LIGHTS

Applies to all models of incomplete vehicles contained in this document

TYPE 2 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed will conform to the Daytime Running Lamps (DRL) requirements of CMVSS108 providing no alterations are made to the ignition switch, DRL system components or wiring, and any vehicle forward, side, or rear lighting as manufactured by Chevrolet.

CMVSS 108 and FMVSS 108 – LAMPS, REFLECTIVE DEVICES AND ASSOCIATED EQUIPMENT

Applies to all models of incomplete vehicles contained in this document

TYPE 2 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 108 and FMVSS 108 providing it is completed in accordance with the following specific conditions by the final stage manufacturer:

1. Body width must be a minimum of 2.032 m (80’’).

2. Each of these devices must be properly installed on the completed vehicle and meet all the requirements of CMVSS 108 and FMVSS 108:
   a. The following devices, when provided, located and/or wired by Chevrolet meet the requirements of this standard.

Headlamps or Daytime running lamps (DRL)
Cab roof clearance and ID lamps (front)
Side marker lamp (Front)
Side reflex reflectors (front)
Turn signal flasher
Turn signal lamps (front)
Turn signal operating unit
Vehicle hazard warning signal operating unit
Vehicle hazard warning signal flasher

b. The following lamps and reflective devices are temporarily mounted on this incomplete vehicle as required for transportation. When relocating them, intermediate or final stage manufacturers must refer to the Body Builders Manual and assure conformance with the location, visibility, and operational requirements of CMVSS 108 and FMVSS 108.

License plate lamp
Rear combination lamps (tail lamps, stop lamps, turn signal lamps and back-up lamps)
Reflex reflectors (rear)
Daytime Running Lamps

c. No part of the completed vehicle shall be installed so as to prevent any of the devices listed in (a) or (b) above from meeting their required photometric output at the specified test points. If such interference exists, the applicable devices may have to be relocated or additional devices added to meet the requirements of CMVSS 108 and FMVSS 108:

Any CMVSS 108 and FMVSS 108 part shall not be painted.

d. The following devices are not installed on this incomplete vehicle or supplied by Chevrolet. When added by intermediate or final stage manufacturers, they must also meet the requirements of CMVSS 108 and FMVSS 108:

Clearance lamps (rear)
Identification lamps (rear)
Side reflex reflectors (rear)
Side marker lamps (rear)

e. The following additional devices must be installed on the van body and meet all requirements of this standard if the overall vehicle length is 9.1 m (30 feet) or greater.

Intermediate side marker lamps
Intermediate side reflex reflectors

3. No alterations (other than any relocation of Items in 2) b.) which may be necessary for conformance to CMVSS 108 and FMVSS 108 should be made which affect the location, mounting surfaces, function, environment or visibility clearance of the above listed devices which have been installed on this incomplete vehicle.

CMVSS 111 and FMVSS 111 – REARVIEW MIRRORS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to FMVSS 111 providing no alterations or substitutions are made to the outside rearview mirrors, the driver's seat location is not altered, and the body is installed symmetrical about the vehicle centerline. The overall width should be no greater than;

Model	Width Limit millimeter (inches)	Width Limit with 102'' wide mirror brackets millimeter (inches)
F*R	2438 mm (96'')	2590 mm (102'')

CMVSS 113 and FMVSS 113 – HOOD LATCH SYSTEM

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to CMVSS 113 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped)

Hood	Hood Latch System

CMVSS 115 and 49 CFR 565 – VEHICLE IDENTIFICATION NUMBER

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 115 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Vehicle Identification Number (VIN)	VIN label or plate VIN plate fasteners

CMVSS119 and FMVSS119 - NEW PNEUMATIC TIRES FOR MOTOR VEHICLES WITH A GVWR OF MORE THAN 4,536 KILOGRAMS (10,000 POUNDS)

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS119 and FMVSS119 providing no alternation are made which affect the function, physical, chemical or mechanical properties, environment, location or vital spatial clearance of the components, assemblies or systems including but not limited to those listed below:

Tires	Wheels

CMVSS 120 and FMVSS 120 – TIRE SELECTION AND RIMS FOR VEHICLES OTHER THAN PASSENGER CARS

Applies to all models of incomplete vehicles contained in this document

TYPE 2 **The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).**

This incomplete vehicle, when completed, will conform to CMVSS 120 and FMVSS 120 provided:

A. No alterations are made which affect the function, physical or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to:

Owner Manual Instructions
Tires
Wheels

B. GVWR, GAWR front and rear weight ratings as listed on the incomplete vehicle label affixed to the front cover of this document are not exceeded.

C. The tire and wheel information shown on the incomplete vehicle label must be transferred to the final stage manufacturer’s Certification label or Tire Information Label providing no equipment or tire pressure changes are made and the final stage manufacturer labels the vehicle in compliance with CMVSS 120 and FMVSS120.

NOTE: Incomplete Vehicles referenced in this document may be shipped with reduced tire pressures for shipping purposes only. Inflate tires to specified pressure before delivery to customers.

CMVSS 121 and FMVSS 121 – AIR BRAKE SYSTEMS

Applies to all models of incomplete vehicles contained in this book

TYPE 1 The following statement is applicable to all types of incomplete vehicles equipped with Air Brakes and contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, if equipped with air brakes, when completed, will conform to CMVSS 121 and FMVSS 121, providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Air brake systems, including but not limited to:

Air brake chambers and slack adjusters
Air brake lines, fittings, and routing including gauges and warning devices
Air brake reservoirs
Air brake valves and components
Air compressor and drive
Anti-Lock brake system
Brake assemblies and components
Brake pedal and mechanical components, including switch
Brake System gauges and warning devices
Spring brake chambers and actuation valve
Tires and wheel speed sensors, and wheel speed sensor wiring
Wheelbase

The maximum vertical center of gravity of the total vehicle at maximum GVWR is not exceeded:

Application	Maximum Center of Gravity millimeter (inches) above ground
F*R	1778 mm (70")

CMVSS 124 and FMVSS 124 – ACCELERATOR CONTROL SYSTEMS
Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 124 and FMVSS 124 providing no alterations are made which affect the function, physical chemical, or mechanical properties, environment, location, or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Accelerator/throttle control systems, including but not limited to:

- Accelerator pedal and attachments
- Accelerator lever and supporting bracket assembly
- Accelerator cable, support brackets, and seals
- Accelerator return spring(s)
- Attachment to injection pump lever - pin, hole, or ball stud
- Downshift switch
- Idling control cable assembly

FMVSS 125 –WARNING DEVICES
Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to FMVSS 125 providing no alterations are made which affect the function, physical chemical, or mechanical properties, environment, location, or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Warning devices (if equipped)

- Safety warning triangles
- Fire Extinguisher
- Backup Alarm

CMVSS 136 and FMVSS 136 – ELECTRONIC STABILITY CONTROL SYSTEMS FOR HEAVY VEHICLES
Applies to all models of incomplete vehicles contained in this document

TYPE 3 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

Conformity with CMVSS 136 and FMVSS 136 cannot be determined upon the components supplied on the incomplete vehicle, and Chevrolet makes no representation to conformity with the standard.

This incomplete vehicle has not been built, tested, or manufactured with an electronic stability control system.

NOTE: This incomplete vehicle cannot be built into a Truck Tractor.

CMVSS 205 and FMVSS 205 – GLAZING MATERIALS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 205 and FMVSS 205 providing no alterations are made which affect the function, physical chemical, or mechanical properties, environment, location, or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Glazing material
Monogram
Driver's Side Reference Point (SgRP)
Visibility of the monogram
Windshield shade banding

Final compliance with CMVSS 205 and FMVSS 205 is the responsibility of the final stage manufacturer for any modifications, or added material, parts, components, or systems.

CMVSS 206 and FMVSS 206 – DOOR LOCKS AND DOOR RETENTION COMPONENTS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to CMVSS 206 and FMVSS 206 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Door lock
Door latch
Door latch striker plate
Door hinge
Inside lock control linkage
Exterior door handles

Final compliance with CMVSS 206 and FMVSS 206 is the responsibility of the final stage manufacturer for any modifications, or added material, parts, components, or systems.

CMVSS 207 and FMVSS 207 – ANCHORAGE OF SEATS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to CMVSS 207 and FMVSS 207 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Seating systems, including but not limited to:

Floor pan assemblies
Folding seat or seat back latch assembly
Seat adjuster assembly
Seat anchorage's brackets reinforcements, attachment hardware, etc.
Seat assembly
Seat or seat back latch assembly
Seat or seat back latch release control
Seat or seat back latch striker
Seat riser

CMVSS 208 and FMVSS 208 – OCCUPANT CRASH PROTECTION

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to the seat belt provision sections of CMVSS 208 and FMVSS 208 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems installed by Chevrolet including but not limited to:

Owner Manual instructions
Seat anchorages
Seat assemblies
Seat belt anchorages
Location/configuration of designated seats
Seat belt assemblies
Seat belt warning system

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any seats, seat belt assemblies or seat belt assembly anchorages installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with CMVSS 208 and FMVSS 208 cannot be determined based upon the components supplied on the incomplete vehicle, and Chevrolet makes no representation to conformity with the standard.

CMVSS 209 and FMVSS 209 – SEAT BELT ASSEMBLIES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to the CMVSS 209 and FMVSS 209 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems installed by Chevrolet including but not limited to:

Owner Manual instructions
Seat anchorages
Seat assemblies
Seat belt anchorages
Location/configuration of designated seats
Seat belt assemblies
Seat belt warning system
Original attachment locations

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any seats, seat belt assemblies or seat belt assembly anchorages installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with CMVSS 209 and FMVSS 209 cannot be determined based upon the components supplied on the incomplete vehicle, and Chevrolet makes no representation to conformity with the standard.

CMVSS 210 and FMVSS 210 – SEAT BELT ASSEMBLY ANCHORAGES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 210 and FMVSS 210 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Seat assemblies
Seat belt assemblies
Floor pan assembly
Seat belt routing
Seat position/adjustment capability
Owner Manual instructions
Seat belt anchorage brackets, plates, and reinforcements
Child restraint system including anchorages, brackets, plates and reinforcements
B or C pillar structures
Roof structure

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any seats, seat belt assemblies or seat belt assembly anchorages installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with CMVSS 210 and FMVSS 210 cannot be determined based upon the components supplied on the incomplete vehicle, and Chevrolet makes no representation to conformity with the standard.

CMVSS 302 and FMVSS 302 – FLAMMABILITY OF INTERIOR MATERIALS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 302 and FMVSS 302 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below, and installed by Chevrolet:

Arm rests
Compartment shelves
Console
Engine compartment covers
Floor coverings
Head restraints
Headlining
Instrument panel
Rear Organizer
Seat assemblies
Seat backs
Seat belts
Seat cushions
Shades
Sun visors
Wheel housing covers

All trim panels including door, front, rear and side panels.

NOTE: This list above includes any other interior materials, such as padding and crash deployed elements that are designed to absorb energy on contact by occupants in the event of a crash

PART II

U.S. EPA, CALIFORNIA, AND CANADA EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA / NHTSA / CANADA GREENHOUSE GAS EMISSIONS /FUEL ECONOMY REGULATIONS

Incomplete vehicles come in three major classifications: (1) Light Duty Vehicles, Light Duty Trucks, and Heavy Duty Vehicles (Including Medium Duty in California) are certified by the primary manufacturer and the vehicle is labeled as being in compliance with emission and fuel economy requirements. (2) Heavy Duty Vehicles are required to have an engine certified by the engine manufacturer and bear an engine emissions label, and if a gasoline vehicle bear an evaporative emissions label. (3) Light Duty Vehicles certified and labeled by the intermediate or final stage vehicle manufacturer as complying with emission and fuel economy requirements.

The incomplete vehicles contained in this document are classified as Heavy Duty Vehicles. The final stage manufacturer is responsible to not exceed the GVWR and GAWR listed on the incomplete vehicle certification label and to apply a Final Vehicle Certification Label. If any of these restrictions are exceeded, re-certification by the final stage manufacturer will be required.

In addition, all gasoline/gasoline-ethanol blend powered Federal/California Light Duty, Medium Duty and Heavy Duty Vehicles are required to have an approved fuel evaporative emission control system. Vehicles certified to Heavy Duty gasoline emission standards also require special evaporative emission labeling. In order to assure that Environmental Protection Agency (EPA), National Highway Traffic Safety Administration (NHTSA), California and Canada Emission Certification and/or Greenhouse Gas/Fuel Economy regulations are met, this vehicle must be completed in strict accordance with all instructions contained in this document, especially the following instructions which relate to:

- EMISSION RELATED COMPONENTS
- EVAPORATIVE EMISSION REQUIREMENTS
- FUEL PIPE AND FUEL NECKS (CALIFORNIA)
- LABELS
- EXTERIOR NOISE

EMISSION RELATED COMPONENTS

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, conforms to U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped), and installed by Chevrolet:

Air inlet system
Axles*2
Catalytic converter
Coolant temperature sensor
Crankcase emission control system
Engine assembly*2
Engine electronics (ECM/PCM/VCM)
Engine speed sensor
Exhaust system*2
Evaporative emission control system (†)*1
Fuel injection system
Fuel system*2
Ignition system (†)
Intake manifold
MAF Sensor

EGR system
Exhaust emission control system
Charge Air Cooler and related system
Exhaust oxygen sensors (if equipped)
Tires*2
Transmission Control Module (TCM)*2
A/C System(if equipped)
Owner Manual instructions

† Gasoline engine

*1 All Federal/California gasoline powered heavy duty vehicles will have an evaporative emission control system that is certified for a fuel tank capacity not to exceed the amount shown on Vehicle Evaporative Emission Control Information Label.

*2 All Federal certified heavy duty vehicles are required to meet Federal Green House Gas (GHG) requirements. Please check the Vehicle Emission Label located either on driver's side door or inside the engine compartment.

Conformance to U.S. EPA, California, and Canadian Exhaust & Green House Gas Emission requirements and restrictions for these incomplete vehicles.

ORIGINAL TIRES for compliance to GHG requirements are described in the Owners Manual.

Refer to the Owners Manual for tire replacement.

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any tires installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with vocational vehicle GHG above 19,500 GVWR and at or below 33,000 GVWR cannot be determined based upon the components not supplied by Chevrolet on the incomplete vehicle and Chevrolet makes no representation to conformity with the standard.

EVAPORATIVE EMISSION REQUIREMENTS.

All models of incomplete vehicles contained in this book are operated on diesel fuel. Evaporative emissions are not required

SPECIFICATION FOR FILL PIPES AND OPENINGS OF MOTOR VEHICLE FUEL TANKS
(APPLICABLE ONLY TO CALIFORNIA GASOLINE/GASOLINE-ETHANOL BLEND POWERED VEHICLES)

LABELS

TYPE 2 The following statement is applicable to all types of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA/NHTSA GREENHOUSE GAS EMISSIONS/FUEL ECONOMY REGULATION labeling requirements providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the Emission Control related Information Labels that are permanently affixed. The labels are required by government regulation and must not be obstructed from view or defaced so as to impair their visibility or legibility.

EXTERIOR NOISE

CMVSS 1106 – EXTERIOR NOISE

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to the above standards providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

Air Induction System (tuning elements)
Alternator
Axles/halfshafts/propshaft
Catalytic converter and its location (if equipped)
Engine assembly
Exhaust & After treatment Systems
Exterior noise generating devices
Exterior rearview mirror assemblies
Front of dash sound deadening material
Hood assembly including sound deadening material and seals
Intake system (i.e. Air filter, Mass Air flow (MAF) sensor, ducts))
Power steering pump
Powertrain control and logic
Powertrain cooling fan and motor assemblies
Radiator/condenser assembly to body seals
Tires (including correct tire pressure)
Transmission/Transaxle assembly
Underbody shields including air deflector
Wheel house liners and shields

Final compliance with CMVSS 1106 is the responsibility of the final stage manufacturer for any modifications, or added material, components, or systems.

PART III

CANADA INTERFERENCE CAUSING EQUIPMENT STANDARD

INTERFERENCE CAUSING EQUIPMENT STANDARD (CANADA ONLY) – ICES-002

Applies to all models of Incomplete Vehicles contained in this document

TYPE 1 The following statement is applicable to all types of incomplete vehicles propelled by an internal combustion engine, electrical means or both contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to the performance requirements of the above standard provided no alterations made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below: (if equipped)

Ignition wires & plugs
Ignition coil(s)
Low voltage battery
Charging system
Spark plug wires
ECM/TCM/PCM
BCM/SDM

Each vehicle propelled by an internal combustion engine, electrical means or both shall bear a bi-lingual label that represents the manufacturer's Self-Declaration of Compliance (SDoC) to Innovation, Science and Economic Development Canada ICES-002. This label shall be permanently affixed to the vehicle propelled by an internal combustion engine, electrical means or both or displayed electronically and its text must be clearly legible.

The final stage manufacturer must provide a statement of compliance on the Final Stage Manufacturer’s Compliance Label or an additional label with the following bilingual information in order to comply with Industry Canada’s Interference Causing Equipment Standard ICES/NMB-002:

ICES/NMB-002

DOCUMENT FOR INCOMPLETE VEHICLE

APPLICABLE TO THE CHEVROLET 2024+ MY LCF SERIES

Isuzu Commercial Truck of America, Inc.
1400 S. Douglass Road, Suite 100
Anaheim, CA 92806

DO NOT REMOVE

THIS DOCUMENT MUST REMAIN WITH THIS VEHICLE UNTIL IT IS CERTIFIED AS A COMPLETED VEHICLE.

PLACE LABEL HERE

The Label affixed here includes the following information:

- The name of the incomplete vehicle manufacturer;
- The month and year the incomplete vehicle manufacturer performed its last manufacturing operation on the incomplete vehicle;
- The vehicle identification number (VIN);
- The Gross Vehicle Weight Rating (GVWR) expressed in kg (lb), intended for the vehicle when it is a completed vehicle;
- The Gross Axle Weight Rating (GAWR) expressed in kg (lb), intended for each axle of the vehicle when it is a completed vehicle, listed in order from front to rear
- Tire size, rim size, cold tire pressure.

This document is furnished as required by the Canada Motor Vehicle Safety Act and United States (U.S.) Federal Motor Vehicle Safety Regulations (FMVSR) to aid intermediate and final stage manufacturers in their determination of conformity of the completed vehicle with applicable Canada Motor Vehicle Safety Standards (CMVSS), U.S. Federal Motor Vehicle Safety Standards (FMVSS), Canadian On-Road Vehicle and Engine Emission Regulations and Canada Interference Causing Equipment Standard – ICES-002. Also included are instructions, which must be followed in order to assure that U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB) emission certification requirements and U.S. National Highway Traffic Safety Administration (NHTSA) Fuel Economy Regulations and Canada/U.S. EPA Greenhouse Gas Regulations are met.

This label attached to this document will indicate this vehicle was manufactured by Builtmore Contract Manufacturing, a division of The SHYFT Group, Inc under a contractual agreement with Chevrolet. All inquiries regarding the content of this document should be forwarded to through the www.gmupfitter.com website.

This document is not a substitute for knowledge and understanding of the requirements of the Canada Motor Vehicle Safety Act, Federal Motor Vehicle Safety Regulations (FMVSR); or applicable Canada Motor Vehicle Safety Standards (CMVSS) and U.S. Federal Motor Vehicle Safety Standards (FMVSS). Intermediate and final stage manufacturers should be familiar with the Regulations and Standards referred to above to be aware of their specific responsibilities as they relate to the final destination and sale of each incomplete vehicle.

Any intermediate or final stage manufacturer making material alterations to this incomplete vehicle during the process of manufacturing the complete vehicle should be constantly vigilant to recognize all effects, either direct or indirect, on other components, assemblies or systems caused by any alteration. No alteration should be made to the incomplete vehicle that directly or indirectly results in any component, assembly or system being in nonconformance with any applicable Canada Motor Vehicle Safety Standard or U.S. Federal Motor Vehicle Safety Standard or Emission Regulation or Fuel Economy/Greenhouse Gas Regulation.

The statements contained in this Incomplete Vehicle Document are accurate as of the date of manufacture of the Incomplete Vehicle and can be relied on by any intermediate and/or final stage manufacturer as a basis for certification.

INTRODUCTION

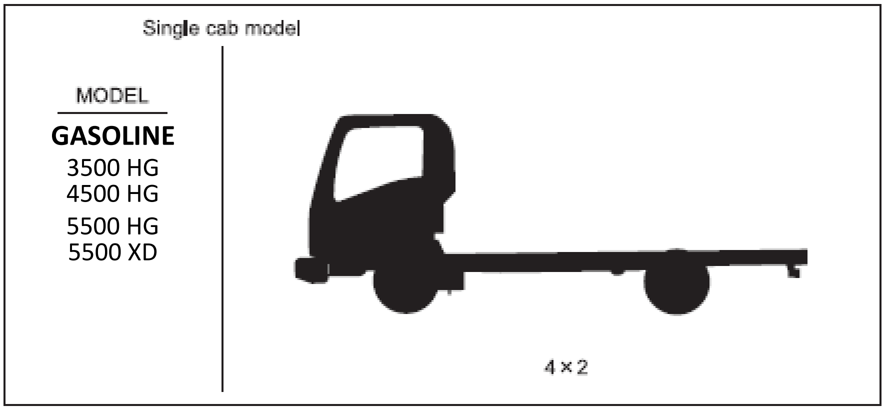
This document contains information relative to conformance of this incomplete vehicle with the following:

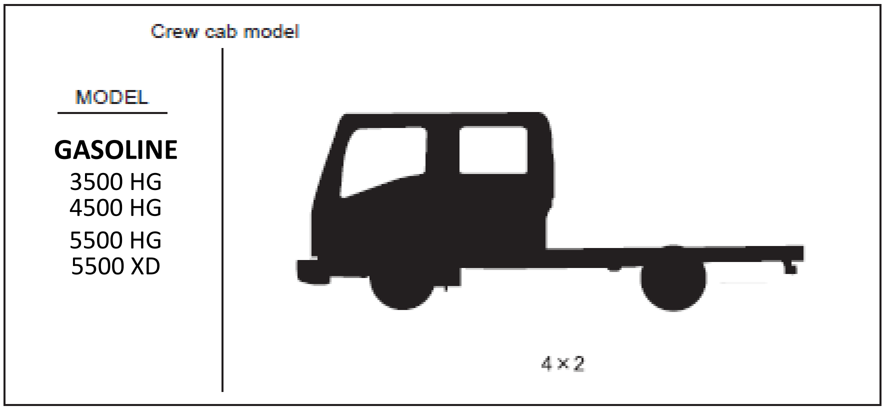
Part I – **U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND CANADA MOTOR VEHICLE SAFETY STANDARDS**

Part II – **U.S. ENVIRONMENTAL PROTECTION AGENCY, STATE OF CALIFORNIA, AND CANADA EMISSION REQUIREMENTS AND NHTSA FUEL ECONOMY REQUIREMENTS, AND CANADA/ U.S. EPA GREENHOUSE GAS REGULATIONS**

Part III – **CANADA INTERFERENCE CAUSING EQUIPMENT STANDARD**

This document pertains to the following styles of truck:


Single cab model
MODEL
GASOLINE
3500 HG
4500 HG
5500 HG
5500 XD
4 × 2


Crew cab model
MODEL
GASOLINE
3500 HG
4500 HG
5500 HG
5500 XD
4 × 2

NOTE: Incomplete vehicle can be built into straight truck type vocational vehicles. It cannot be built into a Truck Tractor or a Bus

PART I

U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND CANADA MOTOR VEHICLE SAFETY STANDARDS

This section contains a list of Canada Motor Vehicle Safety Standard (CMVSS), and U.S. Federal Motor Vehicle Safety Standards (FMVSS), followed by a section entitled "Statements Regarding Canada Motor Vehicle Safety Standards (CMVSS), and Federal Motor Vehicle Safety Standards (FMVSS). An appropriate statement of applicability is made for each standard, and by vehicle model as it relates to the incomplete vehicle.

The identifiers TYPE 1, TYPE 2 or TYPE 3 prefix statements (of applicability) regarding Canada Motor Vehicle Safety Standards (CMVSS), and Federal Motor Vehicle Safety Standards (FMVSS). "Examples" of these statements follow:

TYPE 1 A statement that the vehicle when completed will conform to the standard if no alterations are made in identified components of the incomplete vehicle. EXAMPLE: This vehicle when complete will conform to CMVSS 104 and FMVSS No. 104, Windshield Wiping and Washing Systems, if no alterations are made in the windshield wiper components.

TYPE 2 A statement of specific conditions of final manufacture under which the manufacturer specifies that the completed vehicle will conform to the standard. EXAMPLE: This vehicle when completed will conform to CMVSS 121 and FMVSS 121, Air Brake Systems, if it does not exceed any of the gross axle weight ratings, if the center of gravity at GVWR is not higher than ## feet above the ground, and if no alterations are made to any brake system component.

TYPE 3 A statement that conformity with the standard cannot be determined based upon the components supplied on the incomplete vehicle, and that the incomplete vehicle manufacturer makes no representation to conformity with the standard.

In accordance with the requirements of Canada Motor Vehicle Safety Regulations, and Federal Motor Vehicle Safety Regulations Part 568.4, the following information is included on the label affixed to the front cover of this document:

- The name and mailing address of the incomplete vehicle manufacturer;
- The month and year the incomplete vehicle manufacturer performed its last manufacturing operation on the incomplete vehicle;
- The vehicle identification number (VIN);
- The Gross Vehicle Weight Rating (GVWR) expressed in kg (lb), intended for the vehicle when it is a completed vehicle;
- The Gross Axle Weight Rating (GAWR) expressed in kg (lb), intended for each axle of the vehicle when it is a completed vehicle, listed in order from front to rear.

In addition, the final stage manufacturer is responsible under Canada Motor Vehicle Safety Regulations, and Federal Motor Vehicle Safety Regulations and Part 567.5, to place the GVWR and the GAWR of each axle, on the Final Vehicle Certification Label. Required on label is the "Gross Vehicle Weight Rating" or "GVWR" followed by the appropriate value in kilograms and (pounds), which shall not be less than the sum of the unloaded vehicle weight, rated cargo load, and 68 kg (150 lb.) times the number of the vehicle's designated seating positions, if known. However, for school buses the minimum occupant weight allowance shall be 54.4 kg (120 lb.) per passenger and 68 kg (150 lb.) for the driver.

Unloaded Vehicle Weight means the weight of a vehicle with maximum capacity of all fluids necessary for operation of the vehicle, but without cargo or occupants or accessories that are ordinarily removed from the vehicle when they are not in use.

During the completion of this vehicle, GVWR and GAWR may be affected in various ways, including but not limited to the following:

- The installation of a body or equipment that exceeds the rated capacities of the incomplete vehicle.
- The addition of designated seating positions that exceed the rated capacities of the incomplete vehicle.
- Alterations or substitution of any components such as axles, springs, tires, wheels, frames, steering and brake systems that may affect the rated capacities of the incomplete vehicle.

PART I – CHART A

LIST OF CANADA MOTOR VEHICLE SAFETY STANDARDS (CMVSS), AND FEDERAL MOTOR VEHICLE SAFETY STANDARDS (FMVSS), APPLICABLE TO GASOLINE OR DIESEL – FUELED TRUCKS WITH A GVWR OF GREATER THAN 4536 kg (10,000 lb)

SEE STATEMENTS REGARDING CMVSS AND FMVSS ON PAGES THAT FOLLOW

CMVSS	FMVSS	TITLE	3500/4500HG GASOLINE	5500HG/5500XG GASOLINE
CMVSR Sec 6-7	Part 567**	Labeling and Documentation Requirements	3	3
101	101	Controls and displays	1	1
102	102	Transmission shift lever sequence, starter interlock and transmission braking effect	1	1
103	103	Windshield defrosting and defogging systems	1	1
104	104	Windshield wiping and washing systems	1	1
105	105	Hydraulic brake systems	2	2
106	106	Brake hoses, Hydraulic, air and vacuum	1	1
108	-	Daytime Running Lights	1	1
108	108	Lamps, reflective devices and associated equipment	2	2
111	111	Mirrors and Rearview Visibility Systems	1	1
113	113	Hood Latch System	1	1
115	Part 565 **	Vehicle Identification Number	1	1
116	116	Motor-vehicle brake fluids	1	1
119	119	New pneumatic tires	1	1
120	120	Tire selection and rims	2	2
124	124	Accelerator control systems	1	1
-	125	Warning devices designed to be carried in motor vehicles	1	1
136	136	Electronic Stability Systems for Heavy Vehicles	3	3
205	205	Glazing materials	1	1
206	206	Door locks and door retention components	1	1
207	207	Seating systems	1	1
208	208	Occupant Crash Protection	1,3	1,3
209	209	Seat belt assemblies	1,3	1,3
210	210	Seat belt assembly anchorages	1,3	1,3
302	302	Flammability of interior materials	1	1
ICES-002	-	Canada interference causing equipment standard	1	1
1106	NA	Noise Emissions	1	1

*** TYPE 1, 2 or 3 numbers to the right hand side of the table above designate the appropriate paragraph in the CMVSS or FMVSS standards that follow.**

**** CFR Title 49 Transportation Part 565, Part 567**

Statements Regarding Canada Motor Vehicle Safety Standards (CMVSS), and U.S. Federal Motor Vehicle Safety Standards (FMVSS).

CMVSR SEC. 6 and 49 CFR 567 LABELING AND DOCUMENTATION REQUIREMENTS

Applies to all models of incomplete vehicles contained in this document

TYPE 3 The following statement is applicable to all models of Incomplete Vehicles contained in this document.

This incomplete vehicle, when completed in stages by an intermediate and final stage manufacturer will comply with the requirements of Part 567 or the CMVSR Section 6, when the intermediate and final stage manufactures provide additional labeling to meet these requirements.

CMVSS 101 and FMVSS 101 – CONTROLS AND DISPLAYS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of Incomplete Vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 101 and FMVSS 101 providing no alterations are made which affect the size, location, identification, or illumination of the controls and displays identified or the location, travel and type of driver’s seat. If the driver’s seat is installed by the intermediate or final stage manufacturer, the “H” point must be located as shown in the “Body Builder Manuals” and visibility and operation of the controls and displays listed below must meet the requirements of the standard.

The following controls must be operable, and the following displays for the following functions and malfunctions shall be fitted in such a manner that they are identifiable, by the driver while the driver is seated in the driver’s designated seating position with the driver’s seat belt fastened around the driver in accordance with the manufacturer’s instructions:

Hand operated controls (if equipped):

Automatic vehicle speed (cruise control)
Automatic transmission shift lever
Clearance lamps (switch)
Driver’s Sunvisor
Engine Idle Speed
Engine Start
Engine Stop
Hazard warning signal
Hazard warning switch
Headlamps
Headlamp high or low beam switch
Heating and air conditioning fan
Heating and air conditioning system
Horn control
Identification lamps (switch)
Ignition (switch)
Illumination intensity control
Master lighting switch
Position, side marker, end-outline marker, identification or clearance lamps
Service brake
Steering wheel
Tail lamps
Turn signal
Windshield defogging and defrosting systems
Windshield washer (washing system)
Windshield wiper (wiping system)

Foot operated controls (if equipped):

- Accelerator
- Park brake (pedal)
- Service brake (pedal)

Displays (if equipped):

- Air brake low pressure
- Air bag system readiness
- Antilock brake system malfunction
- Battery charging condition
- Brake lining wear-out condition
- Brake system malfunction (*)
- Brake failure warning
- Electrical charge indicator
- Engine oil pressure
- Fuel level
- Gross loss of brake pressure condition
- Hazard warning signal
- Engine coolant temperature display
- Gear position
- Headlamp high beam
- Low fuel indicator
- Low brake air pressure telltale
- Low brake fluid condition
- Odometer (*)
- Parking brake applied
- Passenger air bag status
- Seat belt (unfastened telltale)
- Speedometer (*)
- Transmission control position
- Turn signal(s)
- Variable brake proportioning system malfunction
- Multi information display (MID)

* For CMVSS only, when Canadian option is specified.

If the intermediate or final stage manufacturer installs any of the above controls and displays, those controls and displays will also have to meet the requirements of this standard.

CMVSS 102 and FMVSS 102 – TRANSMISSION SHIFT LEVER SEQUENCE, STARTER INTERLOCK AND TRANSMISSION BRAKING EFFECT

Applies to all models of incomplete vehicles contained in this document

TYPE 1 **The following statement is applicable to all incomplete vehicle models contained in this document (unless otherwise noted on the cover).**

This incomplete vehicle, when completed, will conform to CMVSS 102 and FMVSS 102 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

Automatic Transmission (A/T) control and identification system, including but not limited to:

- A/T gear shift sequence and control logic (electrical or mechanical)
- A/T steering column assembly
- A/T control from floor shift mechanism to transmission linkage
- A/T floor shift mechanism
- A/T neutral safety switch assembly and wire
- A/T position indicator dial
- Brake – A/T interlock controls
- Engine starter interlock controls
- Vehicle & Chassis wiring harnesses
- A/T position indicator (pointer)
- A/T position indicator actuating linkage
- Automatic transmission assembly
- Transmission shift position pattern (knob, plate or label)

CMVSS 103 and FMVSS 103 – WINDSHIELD DEFROSTING AND DEFOGGING SYSTEMS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all incomplete vehicle models contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 103 and FMVSS 103 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

Windshield defrosting and defogging systems, including but not limited to:

Chassis and instrument panel wiring harness assembly
Defroster air distributor assembly (manifold)
Defroster air duct assembly
Defroster air hoses – manifold to nozzle
Defroster air to windshield outlet assembly (nozzle)
Defroster outlet to heater assembly adapter
Engine water outlet thermostat assembly
Heater & defroster assembly – including motor & blower
Heater & defroster control (mechanical)
Heater blower motor resistor assembly (blower speed control)
Heater & water hoses and hose assemblies
Heater water inlet valve control
Windshield assembly

CMVSS 104 and FMVSS 104 – WINDSHIELD WIPING AND WASHER SYSTEMS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 104 and FMVSS 104 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

Windshield wiping and washing systems, including but not limited to:

Chassis wiring harness
Washer reservoir cap
Water reservoir filler assembly
Windshield assembly
Windshield wiper arm assembly
Windshield wiper blade assembly
Windshield wiper linkage assembly
Windshield wiper and washer control
Windshield wiper and washer motor and pump assembly
Windshield washer fluid reservoir
Windshield washer system hoses
Windshield washer nozzle

CMVSS 105 and FMVSS 105 – HYDRAULIC BRAKE SYSTEMS

Applies to all models of incomplete vehicles contained in this document

TYPE 2 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, if equipped with hydraulic brakes, when completed, will conform to CMVSS 105 and FMVSS 105 providing no alterations are made which affect the function, physical or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems identified below. In addition, the maximum vertical center of gravity specified below must not be exceeded at maximum GVWR and rated front and rear GAWR.

Application	Maximum Center of Gravity millimeter (inches) above ground
NPR/ NPR-HD Gas	1600 mm (63")
NQR/NRR Gas	

Hydraulic Brake Systems, including but not limited to:

Hydraulic brake lines, fittings and routings including gauges, warning devices and warning statements
Hydraulic brake valves and components
Hydraulic brake reservoir
Service and/or parking brake assemblies and components
(Power boosters, master cylinder, ABS module, calipers, wheel cylinders, etc.)
Tires
Wheelbases
Brake pedal, brake light switch, parking brake hand level and switch, and related mechanical components
Brake and ABS warning light
Vacuum pump, tank, pipes and hoses (including warning devices and statements)
Master cylinder reservoir warning statement
Hydraulic booster pump, pipes, hoses and reservoir (including warning devices)

CMVSS 106 and FMVSS 106 – BRAKE HOSES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 106 and FMVSS 106 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Hydraulic Air, and Vacuum Brake Hoses
Hoses and hose end fittings
Labeling requirements
Brake Hose Assemblies – and Brake Hose End Fittings

CMVSS 108 – DAYTIME RUNNING LIGHTS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed will conform to the Daytime Running Lamps (DRL) requirements of CMVSS108 providing no alterations are made to the ignition switch, DRL system components or wiring, and any vehicle forward lighting as manufactured by Chevrole

CMVSS 108 and FMVSS 108 – LAMPS, REFLECTIVE DEVICES AND ASSOCIATED EQUIPMENT

Applies to all models of incomplete vehicles contained in this document

TYPE 2 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 108 and FMVSS 108 providing it is completed in accordance with the following specific conditions by the final stage manufacturer:

1. Body width must be between 2.032 m (80′′) and 2.438 m (96′′). (2.184 m (86′′) MIN Body Width For Crew Cab).

2. Each of these devices must be properly installed on the completed vehicle and meet all the requirements of CMVSS 108 and FMVSS 108:

a. The following devices, when provided, located and/or wired by Chevrole meet the requirements of this standard.

Headlamps or Daytime running lamps
Cab roof clearance and ID lamps (front)
Side marker lamp (Front)
Side reflex reflectors (front)
Turn signal flasher
Turn signal lamps (front)
Turn signal operating unit
Vehicle hazard warning signal operating unit
Vehicle hazard warning signal flasher

b. The following lamps and reflective devices are temporarily mounted on this incomplete vehicle as required for transportation. When relocating them, intermediate or final stage manufacturers must refer to the Body Builders Manual and assure conformance with the location, visibility, and operational requirements of CMVSS 108 and FMVSS 108.

License plate lamp

Rear combination lamps (tail lamps, stop lamps, turn signal lamps and back-up lamps)

Reflex reflectors (rear)

c. No part of the completed vehicle shall be installed so as to prevent any of the devices listed in (a) or (b) above from meeting their required photometric output at the specified test points. If such interference exists, the applicable devices may have to be relocated or additional devices added to meet the requirements of CMVSS 108 and FMVSS 108:

Any CMVSS 108 and FMVSS 108 part shall not be painted.

d. The following devices are not installed on this incomplete vehicle or supplied by Chevrole. When added by intermediate or final stage manufacturers, they must also meet the requirements of CMVSS 108 and FMVSS 108:

Clearance lamps (rear)
Identification lamps (rear)
Side reflex reflectors (rear)
Side marker lamps (rear)

e. The following additional devices must be installed on the van body and meet all requirements of this standard if the overall vehicle length is 9.1 m (30 feet) or greater.

Intermediate side marker lamps
Intermediate side reflex reflectors

3. No alterations (other than any relocation of Items in 2) b.) which may be necessary for conformance to CMVSS 108 and FMVSS 108 should be made which affect the location, mounting surfaces, function, environment or visibility clearance of the above listed devices which have been installed on this incomplete vehicle.

CMVSS 111 and FMVSS 111 – REARVIEW MIRRORS
Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to FMVSS 111 providing no alterations or substitutions are made to the outside rearview mirrors, the driver’s seat location is not altered, and the body is installed symmetrical about the vehicle centerline. The overall width should be no greater than;

Model	Width Limit millimeter (inches)	Width Limit with 102’’ wide mirror brackets millimeter (inches)
NPR / NPR-HD Gas NQR / NRR Gas	2438 mm (96’’)	2590 mm (102’’)

CMVSS 113 and FMVSS 113 – HOOD LATCH SYSTEM
Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to CMVSS 113 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped)

Hood
Hood Latch System

CMVSS 115 and 49 CFR 565 – VEHICLE IDENTIFICATION NUMBER

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 115 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Vehicle Identification Number (VIN)	VIN label or plate VIN plate fasteners

CMVSS 116 and FMVSS 116 – MOTOR VEHICLE BRAKE FLUIDS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when equipped with approved hydraulic brake fluid will conform to CMVSS 116 and FMVSS 116 providing no alterations are made which affect the physical or chemical properties of the brake fluid.

CMVSS 119 and FMVSS 119 - NEW PNEUMATIC TIRES FOR MOTOR VEHICLES WITH A GVWR OF MORE THAN 4,536 KILOGRAMS (10,000 POUNDS)

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS119 and FMVSS119 providing no alternation are made which affect the function, physical, chemical or mechanical properties, environment, location or vital spatial clearance of the components, assemblies or systems including but not limited to those listed below:

Tires	Wheels

CMVSS 120 and FMVSS 120 – TIRE SELECTION AND RIMS FOR VEHICLES OTHER THAN PASSENGER CARS

Applies to all models of incomplete vehicles contained in this document

TYPE 2 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 120 and FMVSS 120 provided:

A. No alterations are made which affect the function, physical or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to:

Owner Manual Instructions
Tires
Wheels

B. GVWR, GAWR front and rear weight ratings as listed on the incomplete vehicle label affixed to the front cover of this document are not exceeded.

C. The tire and wheel information shown on the incomplete vehicle label must be transferred to the final stage manufacturer's Certification label or Tire Information Label providing no equipment or tire pressure changes are made and the final stage manufacturer labels the vehicle in compliance with CMVSS 120 and FMVSS120.

NOTE: Incomplete Vehicles referenced in this document may be shipped with reduced tire pressures for shipping purposes only. Inflate tires to specified pressure before delivery to customers.

CMVSS 124 and FMVSS 124 – ACCELERATOR CONTROL SYSTEMS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 124 and FMVSS 124 providing no alterations are made which affect the function, physical chemical, or mechanical properties, environment, location, or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Accelerator/throttle control systems, including but not limited to: (for Gasoline Vehicles)

Accelerator pedal and attachments
Accelerator lever and supporting bracket assembly
Accelerator return spring(s)

FMVSS 125 –WARNING DEVICES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to FMVSS 125 providing no alterations are made which affect the function, physical chemical, or mechanical properties, environment, location, or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Warning devices (if equipped)

Safety warning triangles
Fire Extinguisher
Backup Alarm

CMVSS 136 and FMVSS 136 – ELECTRONIC STABILITY CONTROL SYSTEMS FOR HEAVY VEHICLES

Applies to all models of incomplete vehicles contained in this document

TYPE 3 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

Conformity with CMVSS 136 and FMVSS 136 cannot be determined upon the components supplied on the incomplete vehicle, and Chevrole makes no representation to conformity with the standard.

This incomplete vehicle has not been built, tested, or manufactured with an electronic stability control system.

NOTE: This incomplete vehicle cannot be built into a Truck Tractor.

CMVSS 205 and FMVSS 205 – GLAZING MATERIALS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 205 and FMVSS 205 providing no alterations are made which affect the function, physical chemical, or mechanical properties, environment, location, or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Glazing material
Monogram
Driver’s Side Reference Point (SgRP)
Visibility of the monogram
Windshield shade banding

Final compliance with CMVSS 205 and FMVSS 205 is the responsibility of the final stage manufacturer for any modifications, or added material, parts, components, or systems.

CMVSS 206 and FMVSS 206 – DOOR LOCKS AND DOOR RETENTION COMPONENTS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to CMVSS 206 and FMVSS 206 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Door lock
Door latch
Door latch striker plate
Door hinge
Inside lock control linkage
Exterior door handles

Final compliance with CMVSS 206 and FMVSS 206 is the responsibility of the final stage manufacturer for any modifications, or added material, parts, components, or systems.

CMVSS 207 and FMVSS 207 – ANCHORAGE OF SEATS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to CMVSS 207 and FMVSS 207 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Seating systems, including but not limited to:

Floor pan assemblies
Folding seat or seat back latch assembly
Seat adjuster assembly
Seat anchorage's brackets reinforcements, attachment hardware, etc.
Seat assembly
Seat or seat back latch assembly
Seat or seat back latch release control
Seat or seat back latch striker
Seat riser

CMVSS 208 and FMVSS 208 – OCCUPANT CRASH PROTECTION

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to the seat belt provision sections of CMVSS 208 and FMVSS 208 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems installed by Chevrole including but not limited to:

Owner Manual instructions
Seat anchorages
Seat assemblies
Seat belt anchorages
Location/configuration of designated seats
Seat belt assemblies
Seat belt warning system

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any seats, seat belt assemblies or seat belt assembly anchorages installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with CMVSS 208 and FMVSS 208 cannot be determined based upon the components supplied on the incomplete vehicle, and Chevrole makes no representation to conformity with the standard.

CMVSS 209 and FMVSS 209 – SEAT BELT ASSEMBLIES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to the CMVSS 209 and FMVSS 209 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems installed by Chevrole including but not limited to:

Owner Manual instructions
Seat anchorages
Seat assemblies
Seat belt anchorages
Location/configuration of designated seats
Seat belt assemblies
Seat belt warning system
Original attachment locations

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any seats, seat belt assemblies or seat belt assembly anchorages installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with CMVSS 209 and FMVSS 209 cannot be determined based upon the components supplied on the incomplete vehicle, and Chevrole makes no representation to conformity with the standard.

CMVSS 210 and FMVSS 210 – SEAT BELT ASSEMBLY ANCHORAGES

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 210 and FMVSS 210 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

- Seat assemblies
- Seat belt assemblies
- Floor pan assembly
- Seat belt routing
- Seat position/adjustment capability
- Owner Manual instructions
- Seat belt anchorage brackets, plates, and reinforcements
- Child restraint system including anchorages, brackets, plates and reinforcements
- B or C pillar structures
- Roof structure

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any seats, seat belt assemblies or seat belt assembly anchorages installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with CMVSS 210 and FMVSS 210 cannot be determined based upon the components supplied on the incomplete vehicle, and Chevrole makes no representation to conformity with the standard.

CMVSS 302 and FMVSS 302 – FLAMMABILITY OF INTERIOR MATERIALS

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to CMVSS 302 and FMVSS 302 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below, and installed by Chevrole:

- Arm rests
- Compartment shelves
- Console
- Engine compartment covers
- Floor coverings
- Head restraints
- Headlining
- Instrument panel
- Rear Organizer
- Seat assemblies
- Seat backs
- Seat belts
- Seat cushions
- Shades
- Sun visors
- Wheel housing covers

All trim panels including door, front, rear and side panels.

NOTE: This list above includes any other interior materials, such as padding and crash deployed elements that are designed to absorb energy on contact by occupants in the event of a crash

PART II

U.S. EPA, CALIFORNIA, AND CANADA EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA / NHTSA / CANADA GREENHOUSE GAS EMISSIONS /FUEL ECONOMY REGULATIONS

Incomplete vehicles come in three major classifications: (1) Light Duty Vehicles, Light Duty Trucks, and Heavy Duty Vehicles (Including Medium Duty in California) are certified by the primary manufacturer and the vehicle is labeled as being in compliance with emission and fuel economy requirements. (2) Heavy Duty Vehicles are required to have an engine certified by the engine manufacturer and bear an engine emissions label, and if a gasoline vehicle bear an evaporative emissions label. (3) Light Duty Vehicles certified and labeled by the intermediate or final stage vehicle manufacturer as complying with emission and fuel economy requirements.

The incomplete vehicles contained in this document are classified as Heavy Duty Vehicles. The final stage manufacturer is responsible to not exceed the GVWR and GAWR listed on the incomplete vehicle certification label and to apply a Final Vehicle Certification Label. If any of these restrictions are exceeded, re-certification by the final stage manufacturer will be required.

In addition, all gasoline/gasoline-ethanol blend powered Federal/California Light Duty, Medium Duty and Heavy Duty Vehicles are required to have an approved fuel evaporative emission control system. Vehicles certified to Heavy Duty gasoline emission standards also require special evaporative emission labeling. In order to assure that Environmental Protection Agency (EPA), National Highway Traffic Safety Administration (NHTSA), California and Canada Emission Certification and/or Greenhouse Gas/Fuel Economy regulations are met, this vehicle must be completed in strict accordance with all instructions contained in this document, especially the following instructions which relate to:

- EMISSION RELATED COMPONENTS
- EVAPORATIVE EMISSION REQUIREMENTS
- FUEL PIPE AND FUEL NECKS (CALIFORNIA)
- LABELS
- EXTERIOR NOISE

EMISSION RELATED COMPONENTS

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, conforms to U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped), and installed by Chevrole:

Air inlet system
Axles*2
Catalytic converter
Coolant temperature sensor
Crankcase emission control system
Engine assembly*2
Engine electronics (ECM/PCM/VCM)
Engine speed sensor
EGR system
Exhaust system*2
Evaporative emission control system (†)*1
Fuel injection system
Fuel system*2
Ignition system (†)
Intake manifold
MAF Sensor
Tires*2

Exhaust emission control system	Transmission Control Module (TCM)*2
Charge Air Cooler and related system	A/C System(if equipped)
Exhaust oxygen sensors (if equipped)	Owner Manual instructions

† Gasoline engine

*1 All Federal/California gasoline powered heavy duty vehicles will have an evaporative emission control system that is certified for a fuel tank capacity not to exceed the amount shown on Vehicle Evaporative Emission Control Information Label.

*2 All Federal certified heavy duty vehicles are required to meet Federal Green House Gas (GHG) requirements. Please check the Vehicle Emission Label located either on driver's side door or inside the engine compartment.

Conformance to U.S. EPA, California, and Canadian Exhaust & Green House Gas Emission requirements and restrictions for these incomplete vehicles.

ORIGINAL TIRES for compliance to GHG requirements are described in the Owners Manual.

Refer to the Owners Manual for replacing of tires.

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to any tires installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with vocational vehicle GHG at or below 19,500 GVWR cannot be determined based upon the components supplied on the incomplete vehicle, and Chevrole makes no representation to conformity with the standard.

EVAPORATIVE EMISSION REQUIREMENTS.

TYPE 1 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to applicable exhaust and evaporative emission requirements providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below, and installed by Chevrole:

Fuel Tank Assembly
Fuel feed hoses front and rear
Fuel return hoses front and rear
Fuel tank filler hoses to filler neck
Exhaust system

Fuel tank vent hoses to filler neck
Fuel vapor lines at canister
Fuel vapor lines from engine to chassis pipes
Fuel vapor lines from fuel tank
sender to chassis pipes

SPECIFICATION FOR FILL PIPES AND OPENINGS OF MOTOR VEHICLE FUEL TANKS
(APPLICABLE ONLY TO CALIFORNIA GASOLINE/GASOLINE-ETHANOL BLEND POWERED VEHICLES)

TYPE 2 The following statement is applicable to all models of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to Title 13, California Code of Regulations Section 2235, and the “Specifications for Fill Pipes and Openings of 2015 and subsequent Model Year Motor Vehicle Fuel Tanks”, dated March 22, 2012, providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the fuel filler neck(s) and any intermediate or final stage manufacturer completes the fuel filler neck installation(s) according to the instructions which are furnished in the loose parts box.

TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document with respect to fuel neck assemblies installed by the intermediate or final stage manufacturer (unless otherwise noted on the cover).

Conformity with California’s SPECIFICATION FOR FILL PIPES AND OPENINGS OF MOTOR VEHICLE FUEL TANKS cannot be determined based on the components supplied on the incomplete vehicle, and Chevrolet makes no representation to conformity with the standard.

LABELS

TYPE 2 The following statement is applicable to all types of incomplete vehicles contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA/NHTSA GREENHOUSE GAS EMISSIONS/FUEL ECONOMY REGULATION labeling requirements providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the Emission Control related Information Labels that are permanently affixed. The labels are required by government regulation and must not be obstructed from view or defaced so as to impair their visibility or legibility.

EXTERIOR NOISE

CMVSS 1106 – EXTERIOR NOISE

Applies to all models of incomplete vehicles contained in this document

TYPE 1 The following statement is applicable to all models of incomplete vehicles (unless otherwise noted on the cover of this document).

This incomplete vehicle, when completed, will conform to the above standards providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below (if equipped):

- Air Induction System (tuning elements)
- Alternator
- Axles/halfshafts/propshaft
- Catalytic converter and its location (if equipped)
- Engine assembly
- Exhaust System
- Exterior noise generating devices
- Exterior rearview mirror assemblies
- Front of dash sound deadening material
- Hood assembly including sound deadening material and seals
- Intake system (i.e. Air filter, Mass Air flow (MAF) sensor, ducts))
- Power steering pump
- Powertrain control and logic
- Powertrain cooling fan and motor assemblies
- Radiator/condenser assembly to body seals
- Tires (including correct tire pressure)
- Transmission/Transaxle assembly
- Underbody shields including air deflector
- Wheel house liners and shields

Final compliance with CMVSS 1106 is the responsibility of the final stage manufacturer for any modifications, or added material, components, or systems.

PART III

CANADA INTERFERENCE CAUSING EQUIPMENT STANDARD

INTERFERENCE CAUSING EQUIPMENT STANDARD (CANADA ONLY) – ICES-002

Applies to all models of Incomplete Vehicles contained in this document

TYPE 1 The following statement is applicable to all types of incomplete vehicles propelled by an internal combustion engine, electrical means or both contained in this document (unless otherwise noted on the cover).

This incomplete vehicle, when completed, will conform to the performance requirements of the above standard provided no alterations made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

Ignition wires & plugs
Ignition coil(s)
Low voltage battery
Charging system
Spark plug wires
ECM/TCM/PCM
BCM/SDM

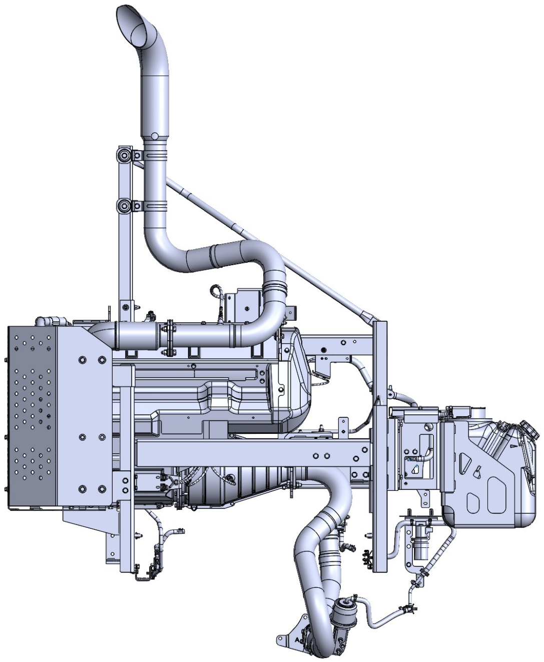
Each vehicle propelled by an internal combustion engine, electrical means or both shall bear a bi-lingual label that represents the manufacturer's Self-Declaration of Compliance (SDoC) to Innovation, Science and Economic Development Canada ICES-002. This label shall be permanently affixed to the vehicle propelled by an internal combustion engine, electrical means or both or displayed electronically and its text must be clearly legible.

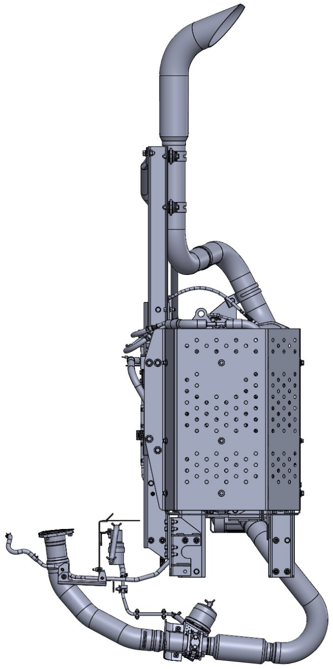
The final stage manufacturer must provide a statement of compliance on the Final Stage Manufacturer’s Compliance Label or an additional label with the following bilingual information in order to comply with Industry Canada’s Interference Causing Equipment Standard ICES/NMB-002:

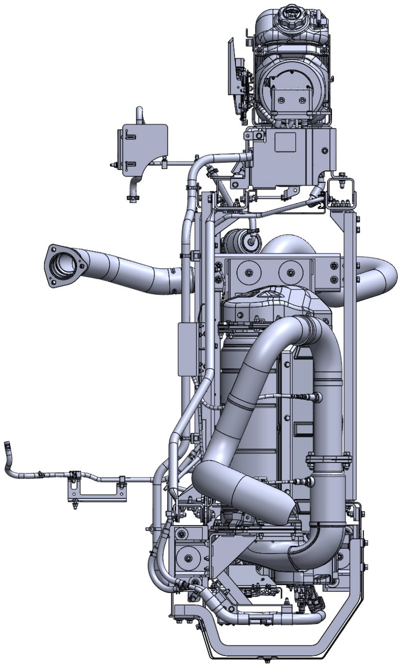
ICES/NMB-002

LCF Series Vertical Exhaust

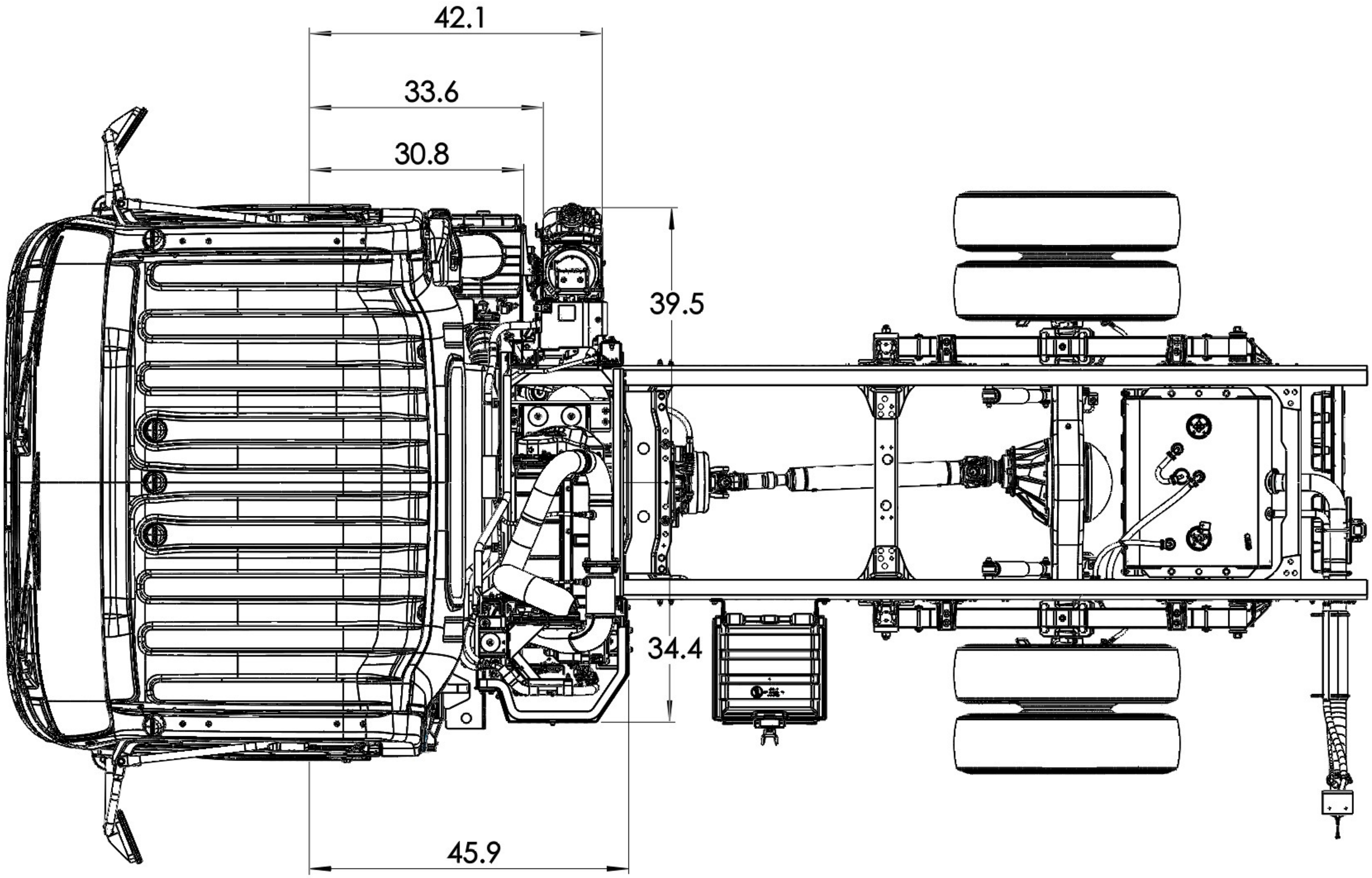
- Available on 4500 HG 14,500 GVW,4500 XD 16,000 GVW, 5500 HD DERATE 17,950 GVW, and 550 HD 19,500 GVW
- Vertical exhaust is available on 109, 132.5, 150, 176, 200, and 212 inch wheelbases
- Option Code I0A
- Not available on gas engine models
- Available as a port installed option only
- Available with in rail fuel tank only
- Available with single cab only



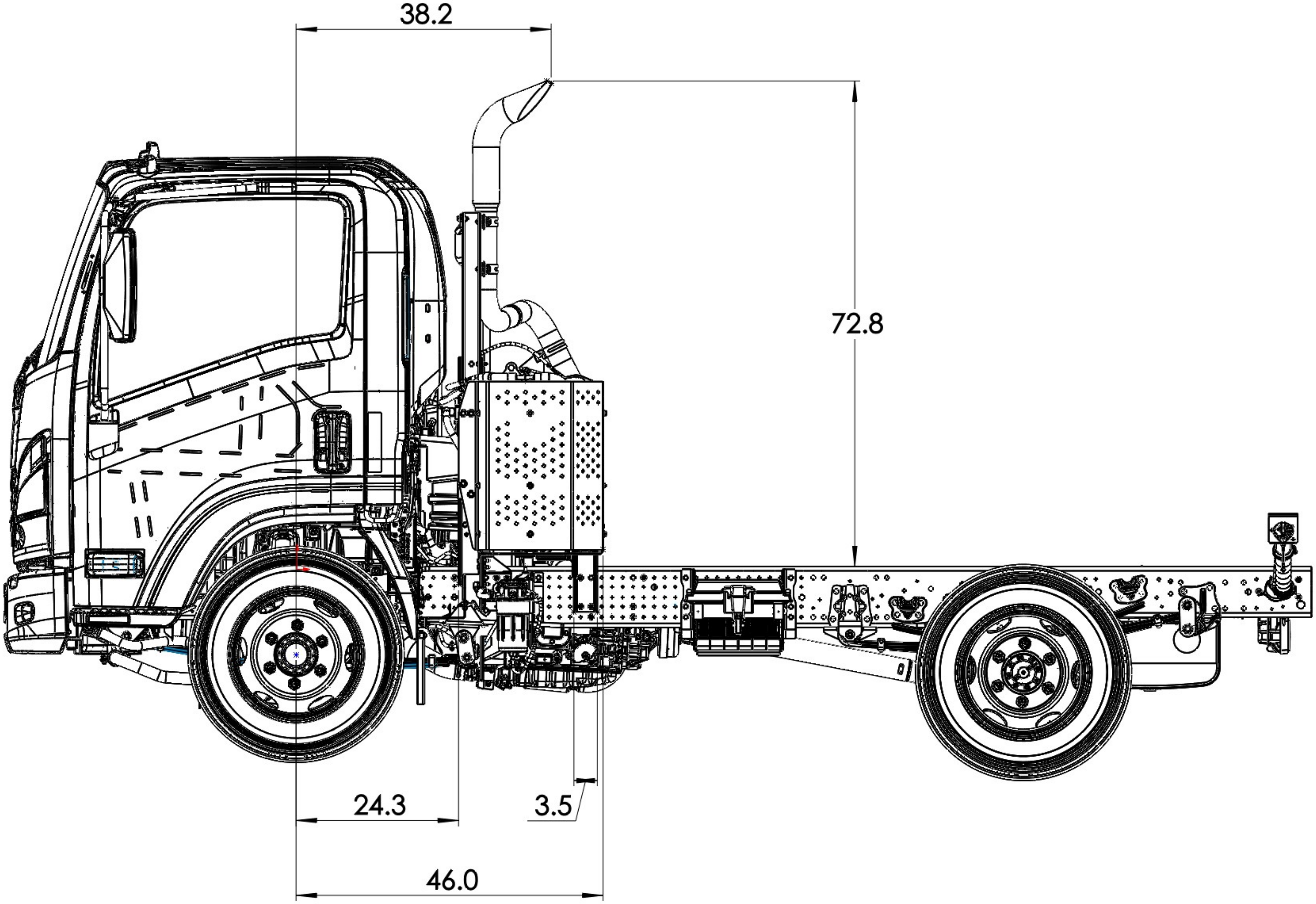




Vertical Exhaust - Top View


42.1
33.6
30.8
39.5
34.4
45.9

Vertical Exhaust - Driver Side View


38.2
72.8
24.3
3.5
46.0

6500 & 7600 *Single Cab - Side View*

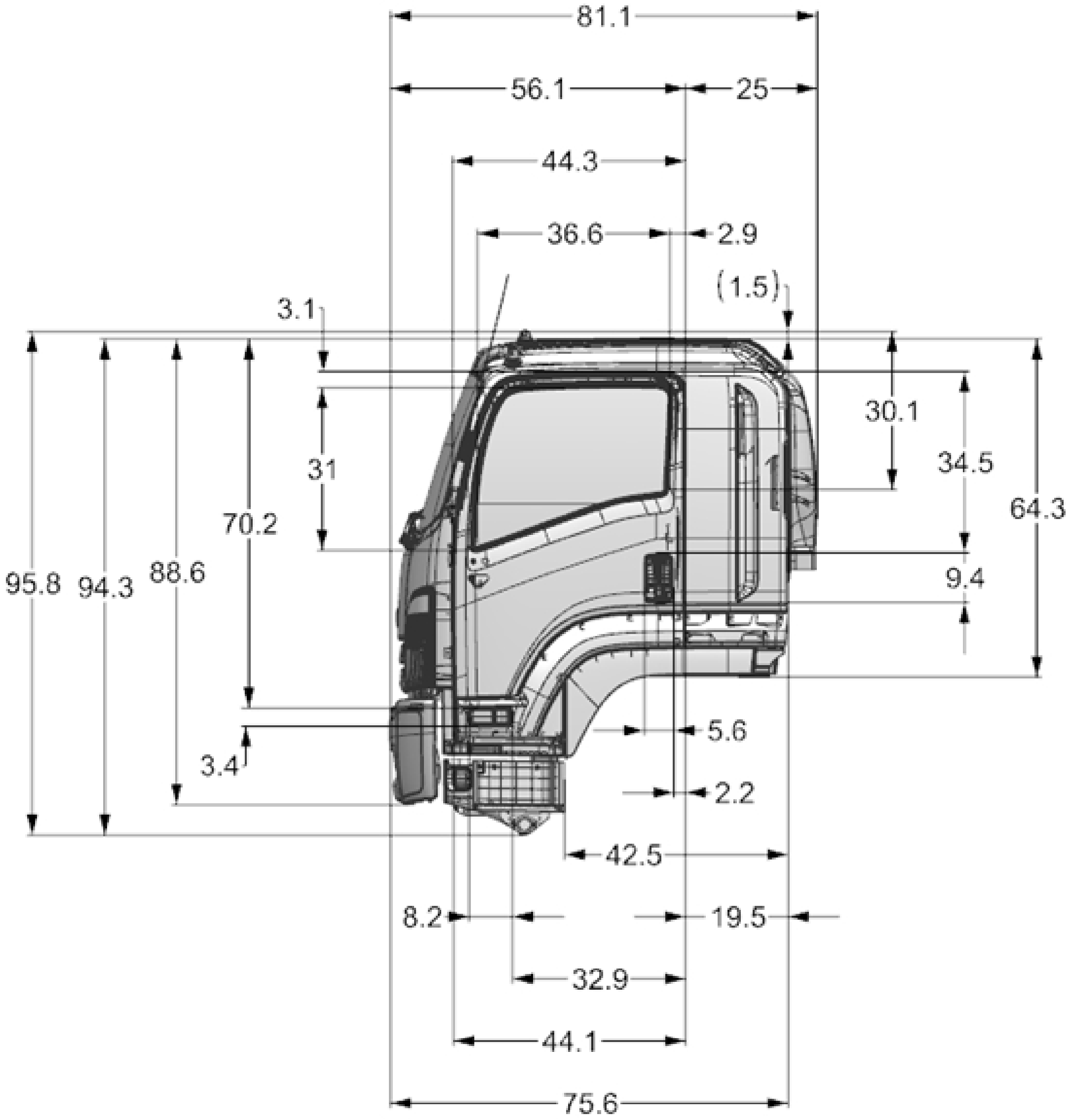

81.1
56.1
25
44.3
36.6
2.9
(1.5)
3.1
30.1
34.5
31
64.3
70.2
9.4
95.8
94.3
88.6
5.6
3.4
2.2
42.5
8.2
19.5
32.9
44.1
75.6

Figure 1

Dimensions in inches

6500 & 7500 *Single Cab - Front View*

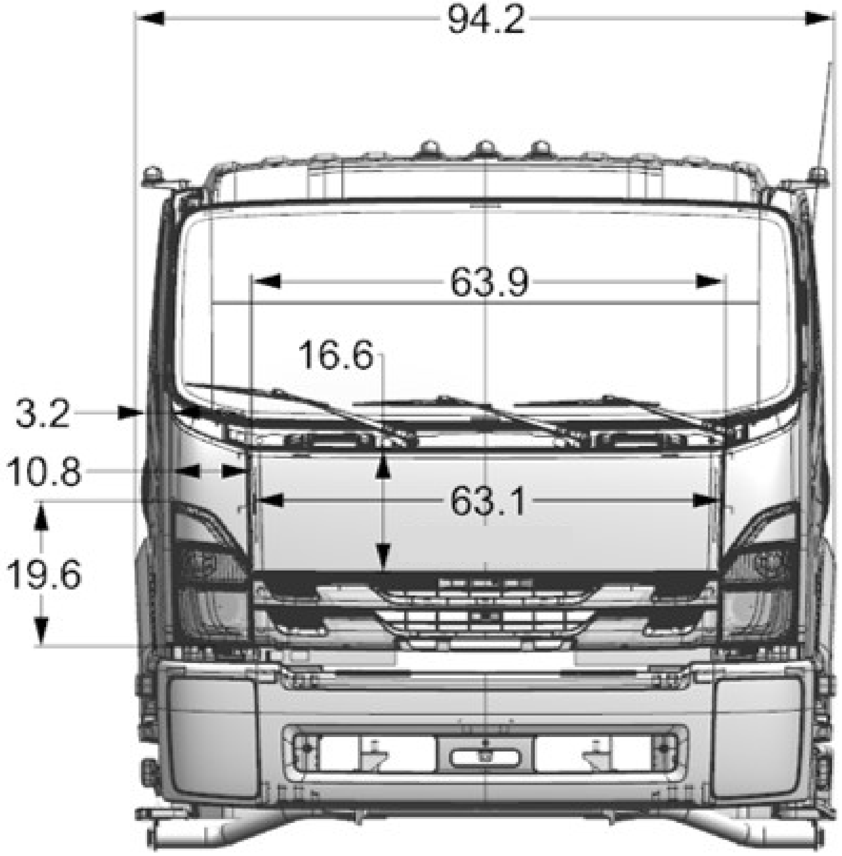

94.2
63.9
16.6
3.2
10.8
63.1
19.6

Figure 2

Dimensions in inches

6500 & 7500 *Single Cab - Rear View*

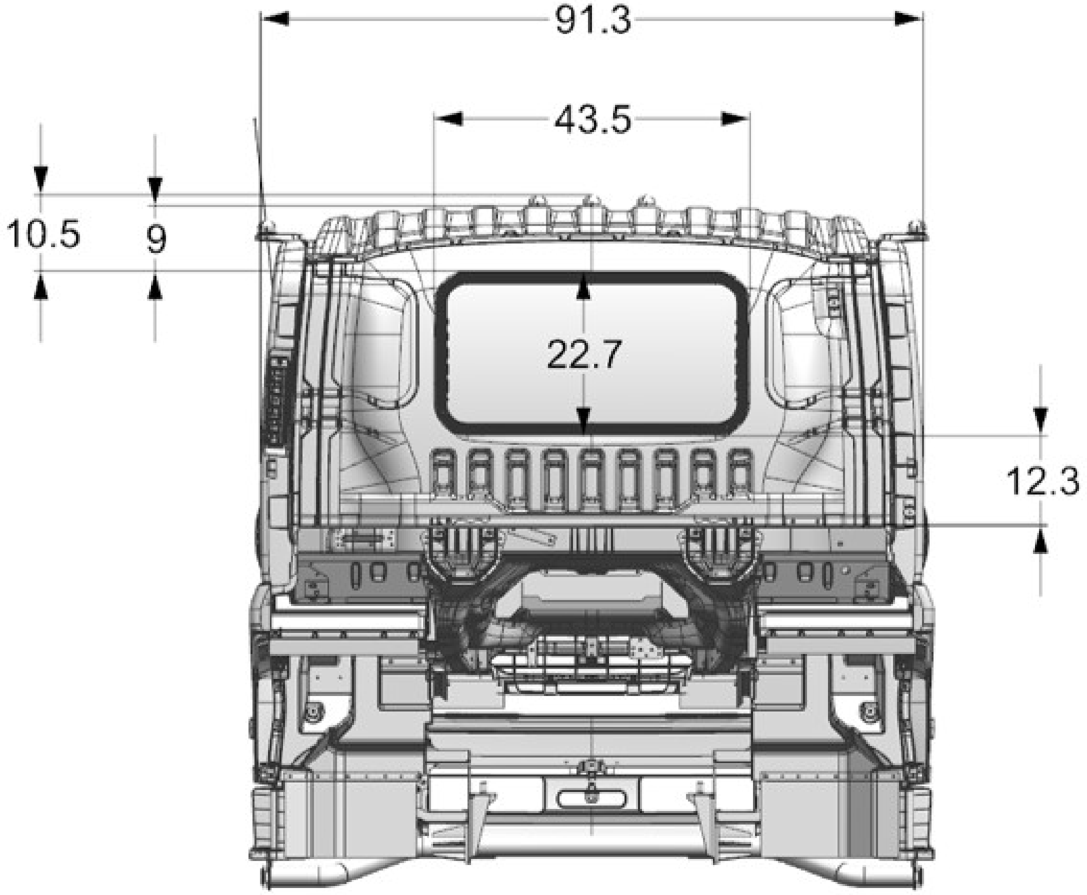
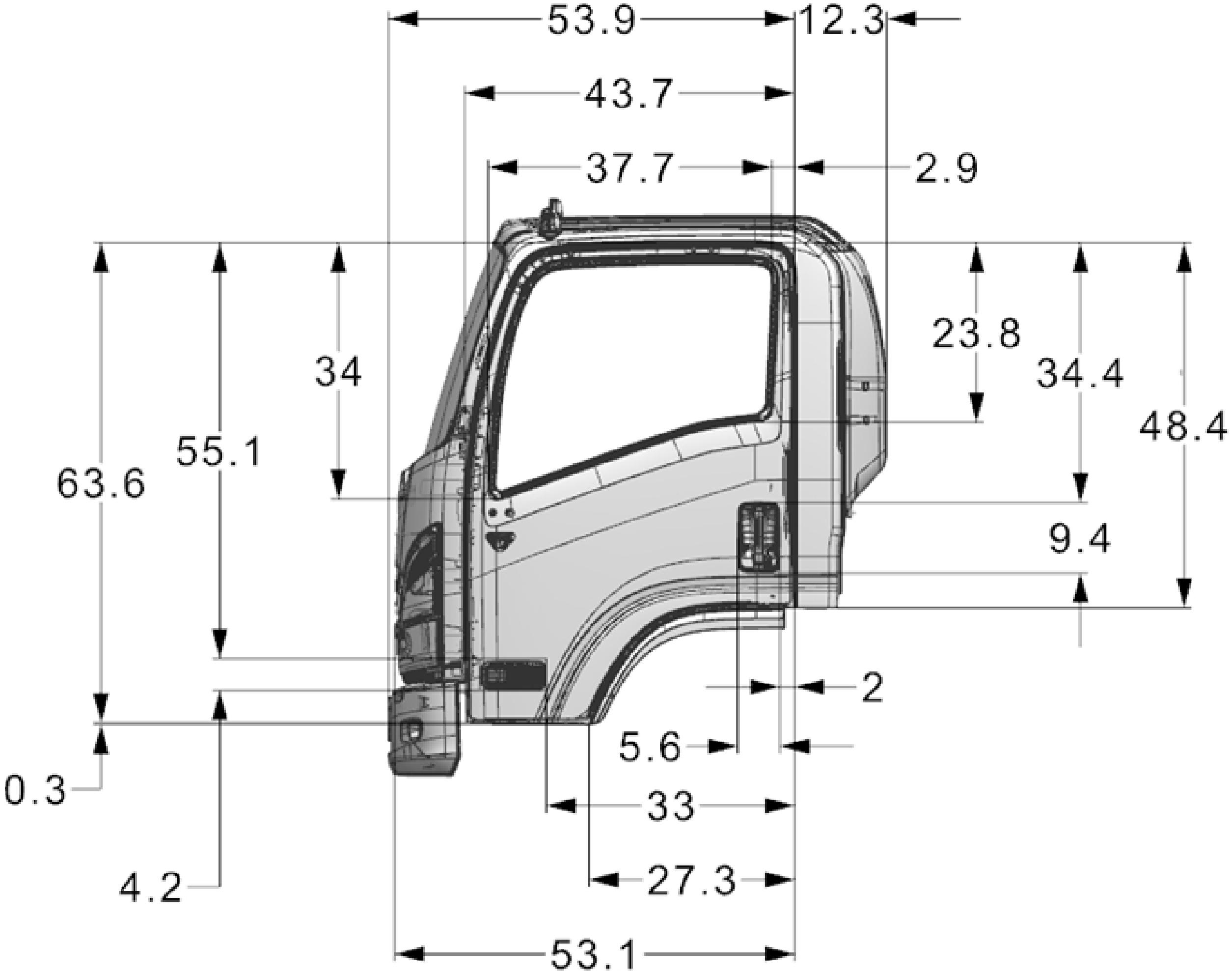

91.3
43.5
10.5
9
22.7
12.3

Figure 3

Dimensions in inches

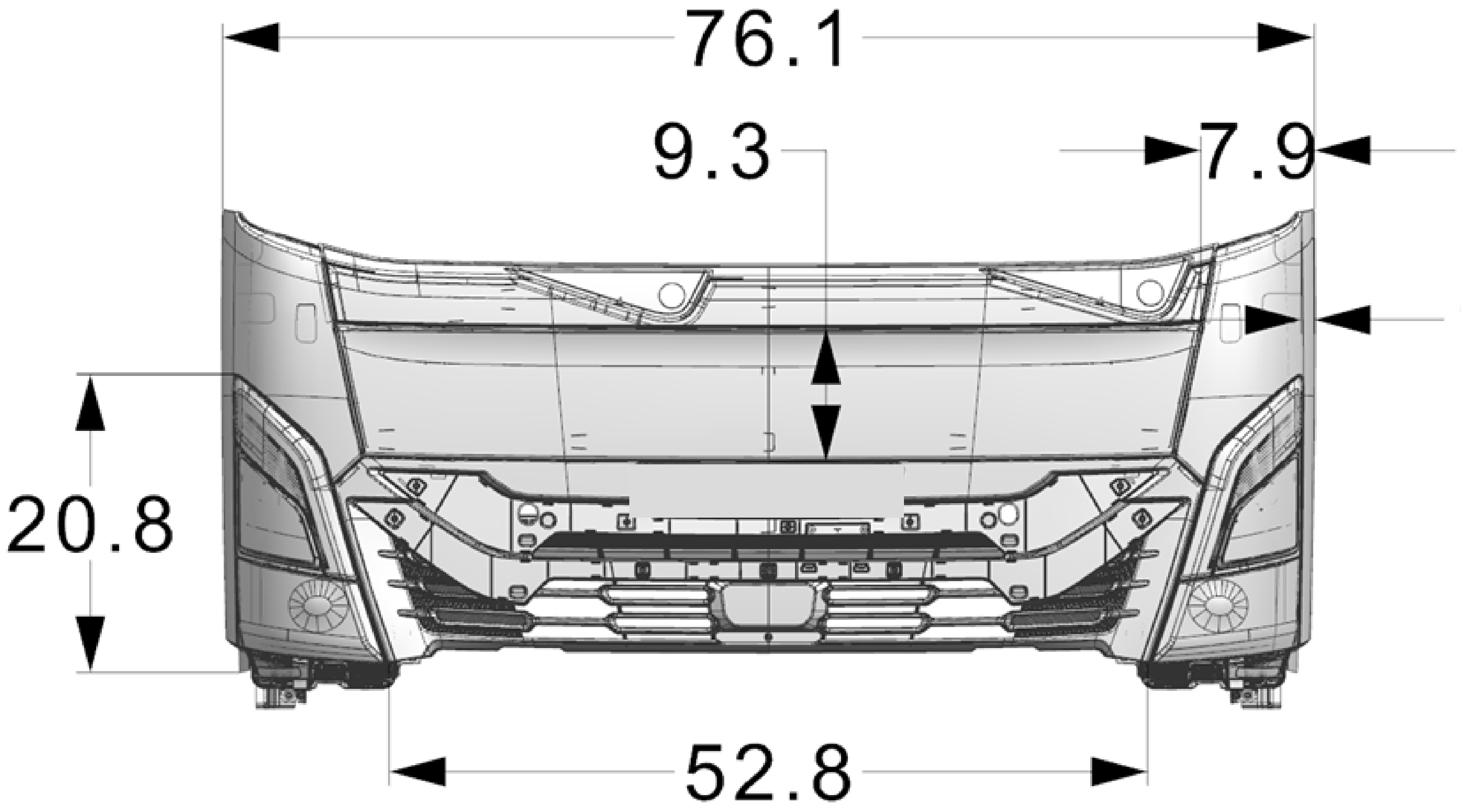
26MY Diesel Single Cab - Side View


53.9
12.3
43.7
37.7
2.9
34
55.1
63.6
23.8
34.4
48.4
9.4
2
5.6
0.3
33
4.2
27.3
53.1

Dimensions in inches

Figure 1

26MY Diesel Single Cab - Front View


76.1
9.3
7.9
1
20.8
52.8

Dimensions in inches

Figure 2

26MY Diesel Single Cab - Rear View

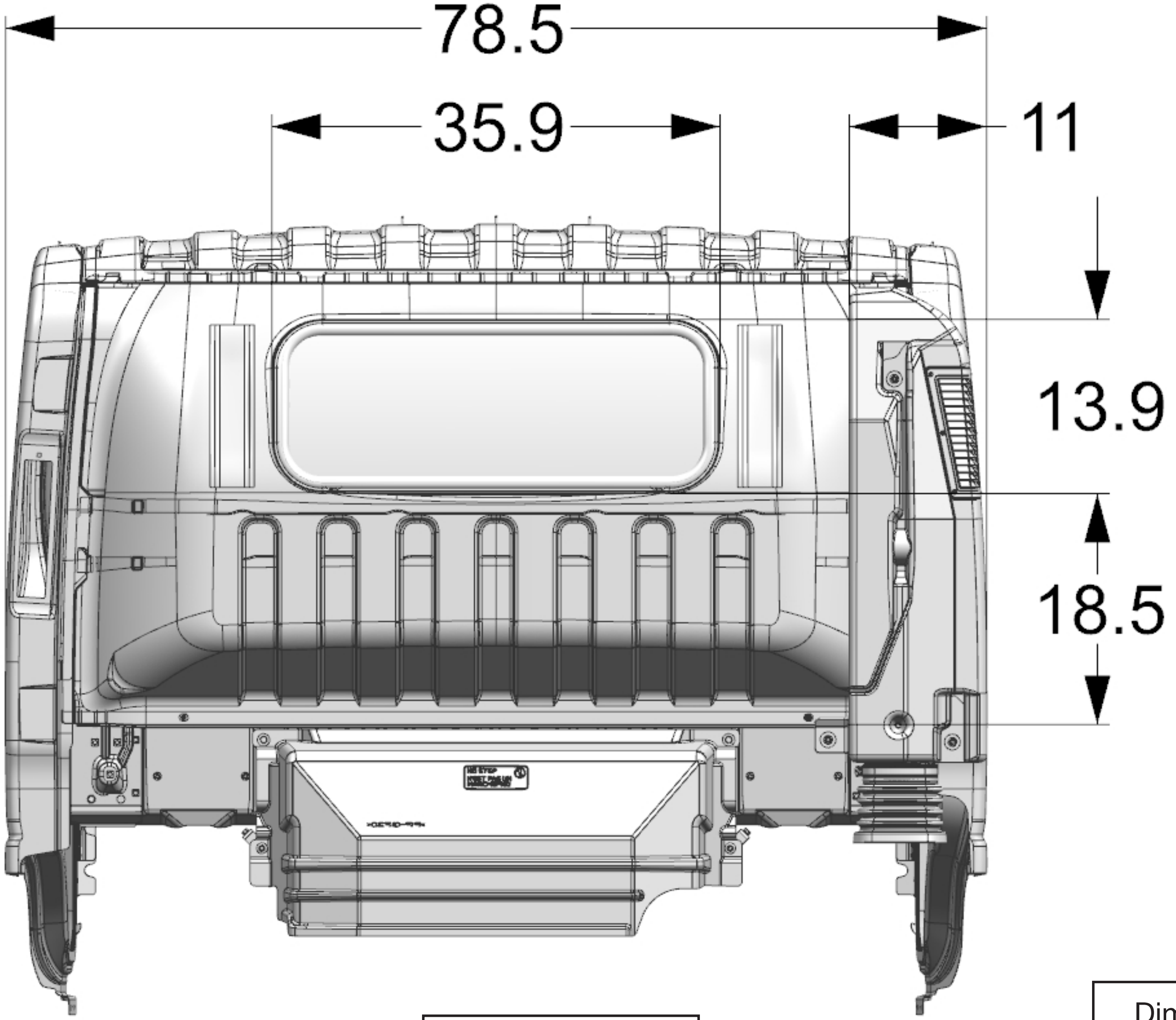


Figure 3

Dimensions in inches

Note:
top of window to top of roof 7.64 inches
top of window to top of cab roof lights 9.64 inches

26MY Diesel Crew Cab - Cab Side View

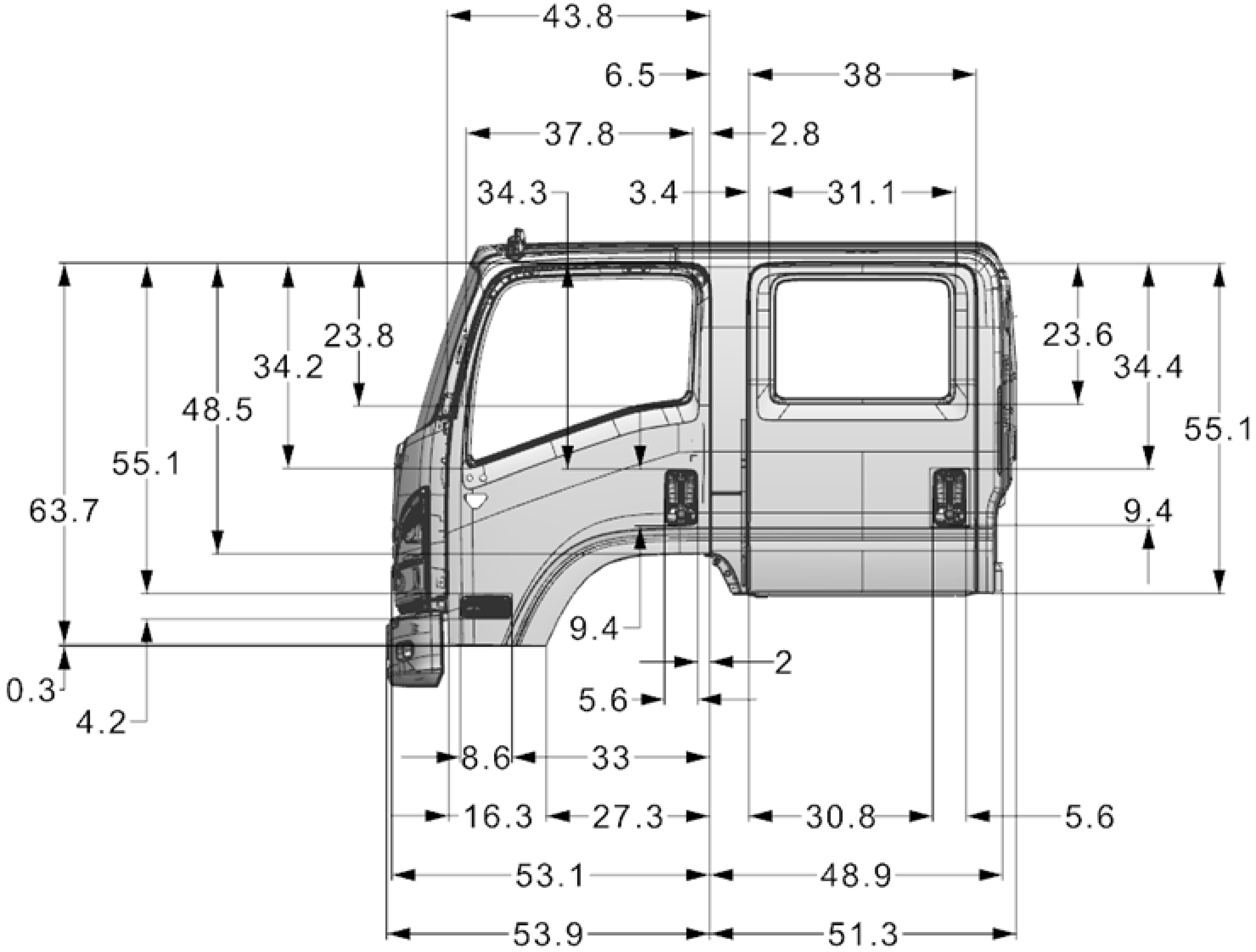

43.8
6.5
38
37.8
2.8
34.3
3.4
31.1
23.8
34.2
48.5
55.1
63.7
0.3
4.2
9.4
5.6
2
8.6
33
16.3
27.3
30.8
5.6
53.1
48.9
53.9
51.3
23.6
34.4
55.1
9.4

Figure 4

Dimensions in inches

26MY Diesel Crew Cab - Front View

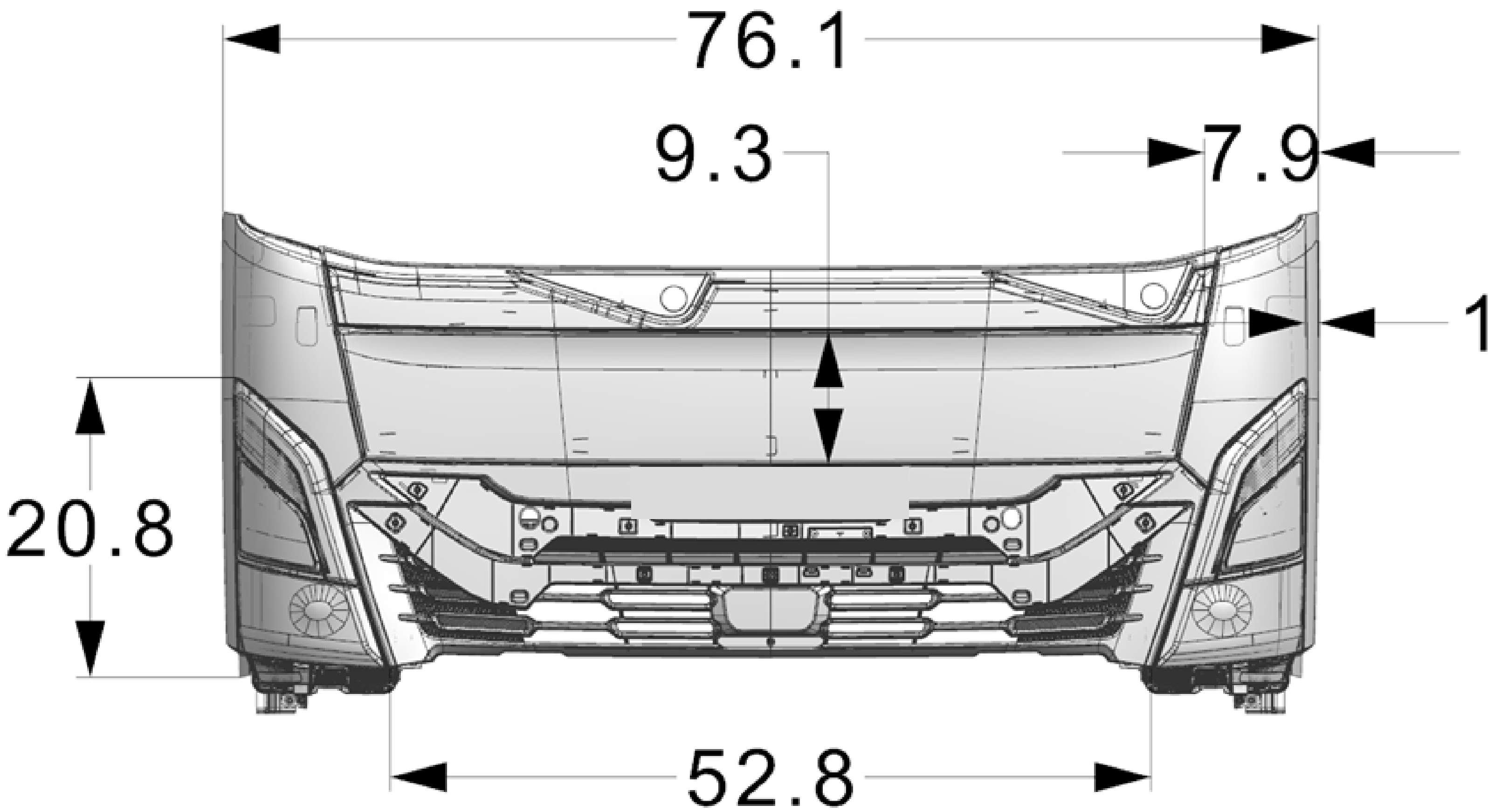

76.1
9.3
7.9
1
20.8
52.8

Figure 5

Dimensions in inches

26MY Diesel Crew Cab - Rear View

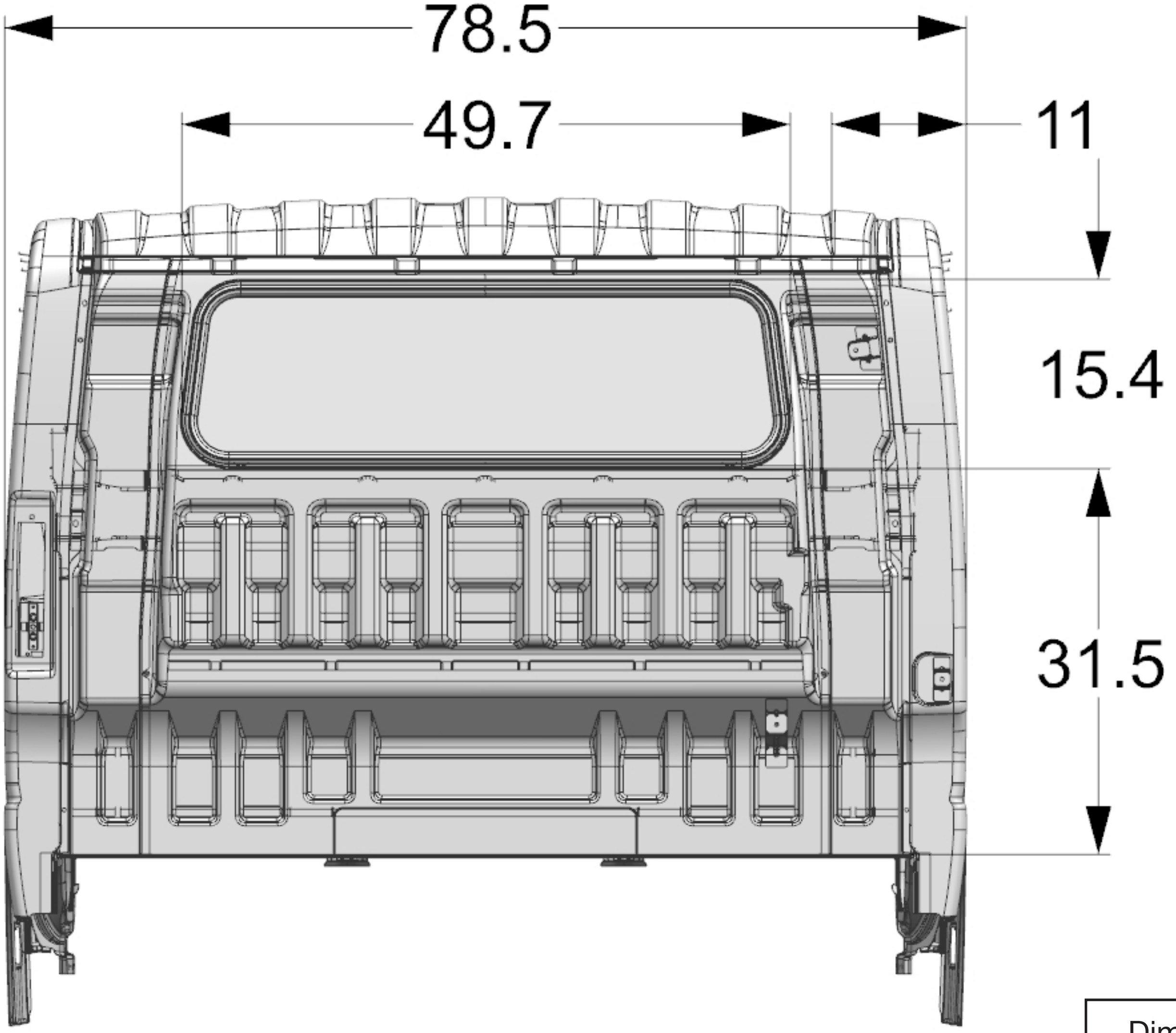
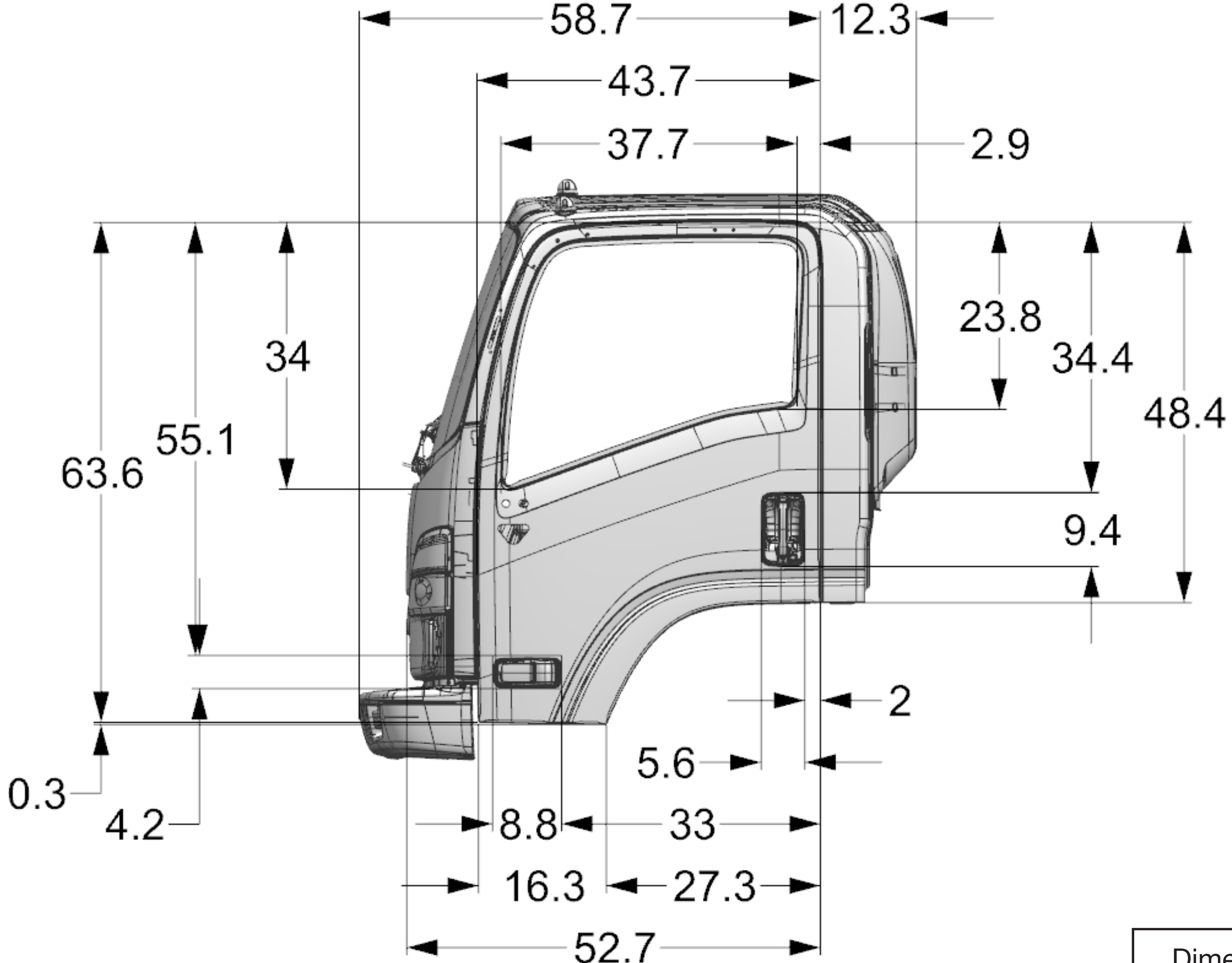

78.5
49.7
11
15.4
31.5

Figure 6

Dimensions in inches

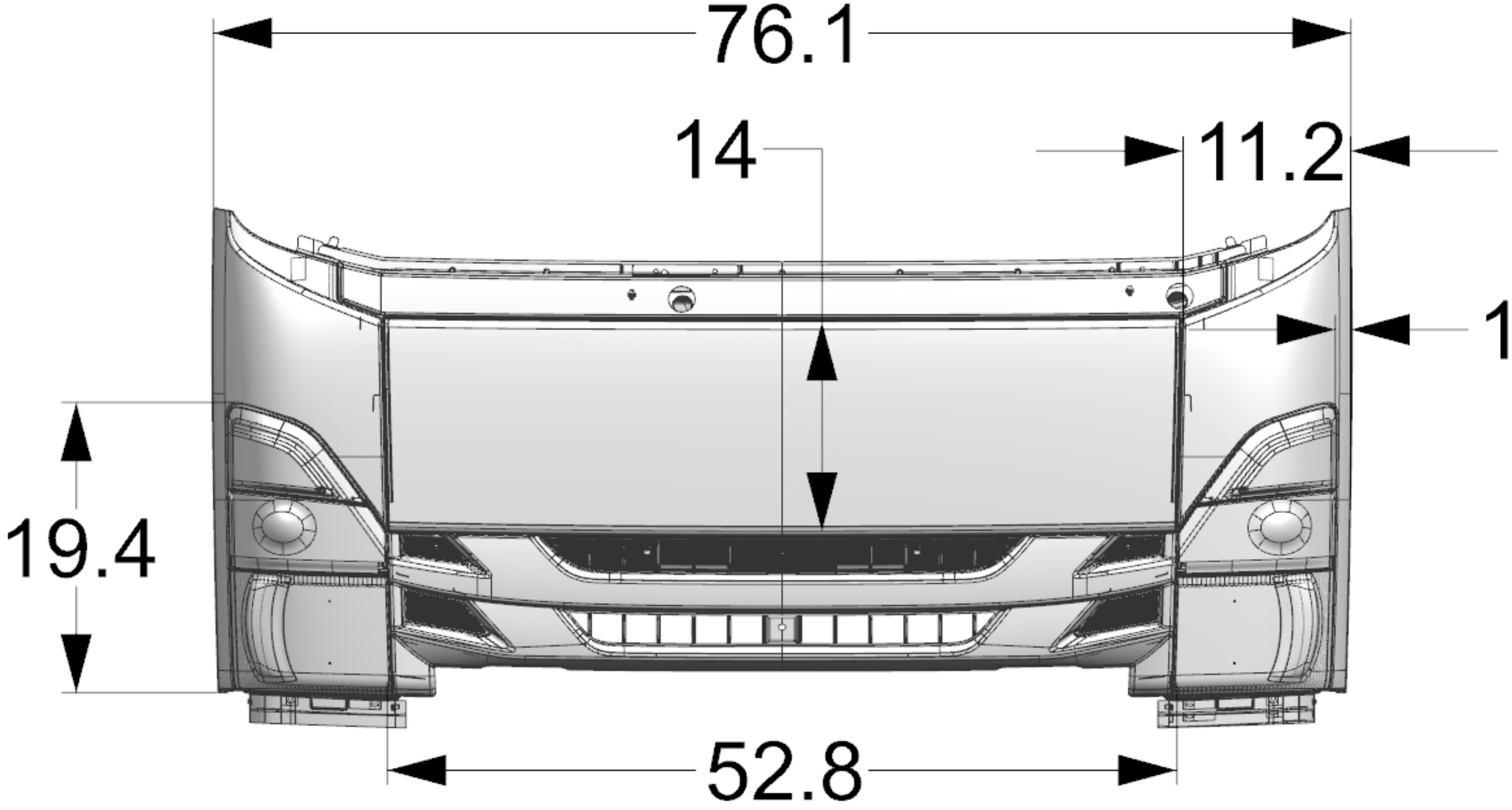
26MY Gas Single Cab - Side View


58.7
12.3
43.7
37.7
2.9
34
55.1
63.6
23.8
34.4
48.4
9.4
2
5.6
0.3
4.2
8.8
33
16.3
27.3
52.7

Dimensions in inches

Figure 7

26MY Gas Single Cab - Front View


76.1
14
11.2
1
19.4
52.8

Dimensions in inches

Figure 8

26MY Gas Single Cab - Rear View

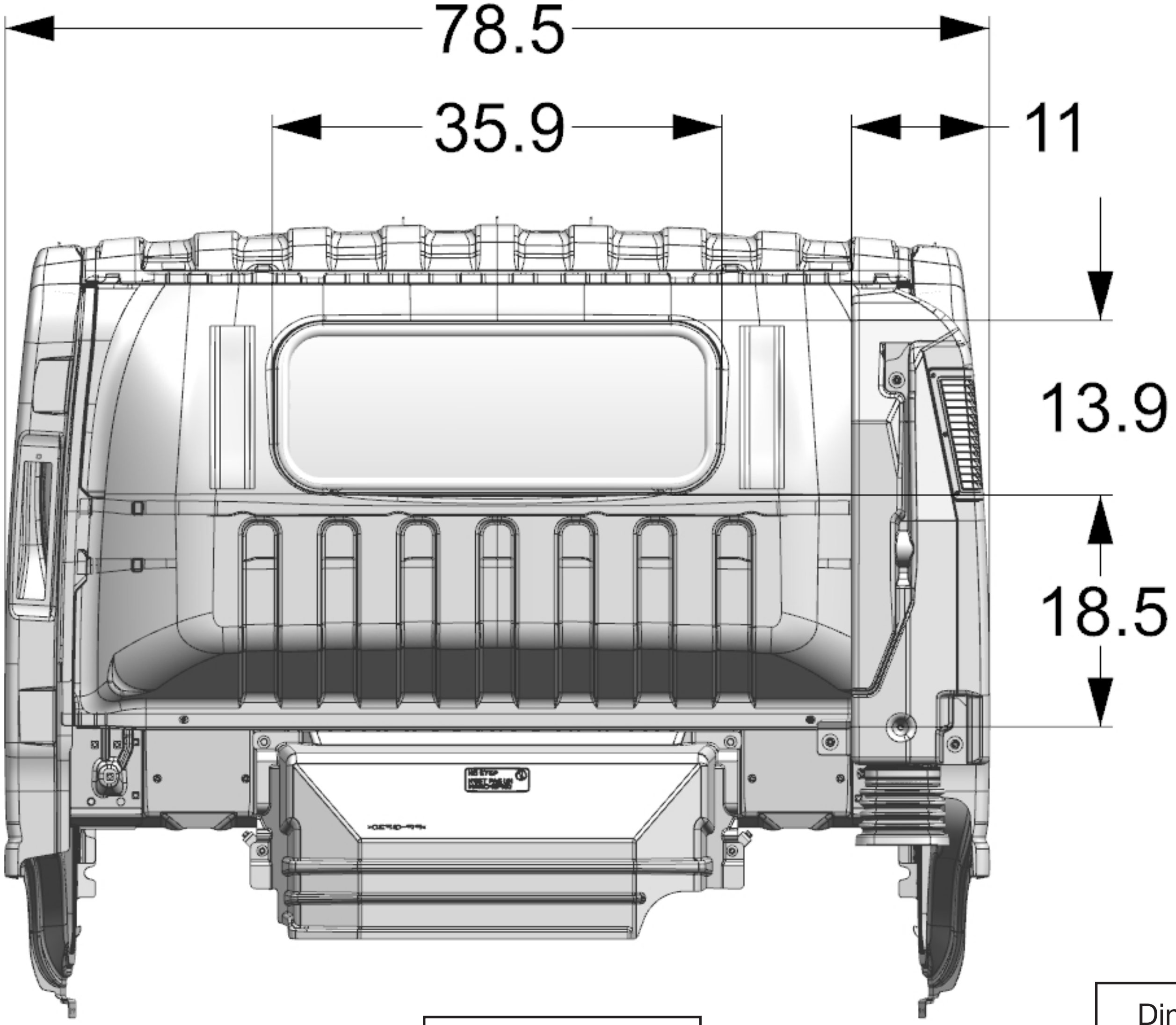


Figure 9

Dimensions in inches

Note:
top of window to top of roof 7.64 inches
top of window to top of cab roof lights 9.64 inches

26MY Gas Crew Cab - Cab Side View

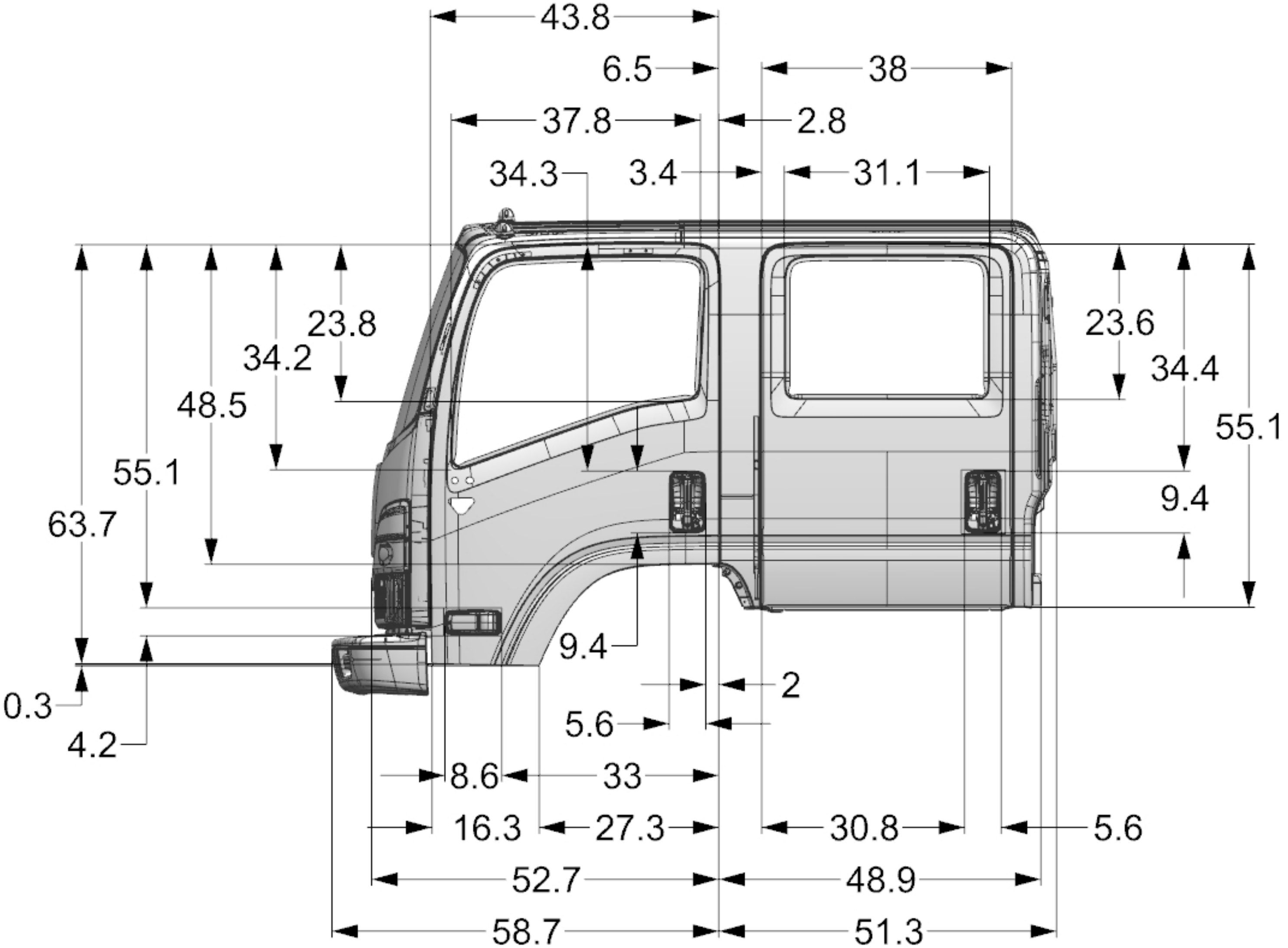

43.8
6.5
38
37.8
2.8
34.3
3.4
31.1
23.8
34.2
48.5
55.1
63.7
23.6
34.4
55.1
9.4
9.4
0.3
4.2
5.6
2
8.6
33
16.3
27.3
30.8
5.6
52.7
48.9
58.7
51.3

Figure 10

Dimensions in inches

26MY Gas Crew Cab - Front View

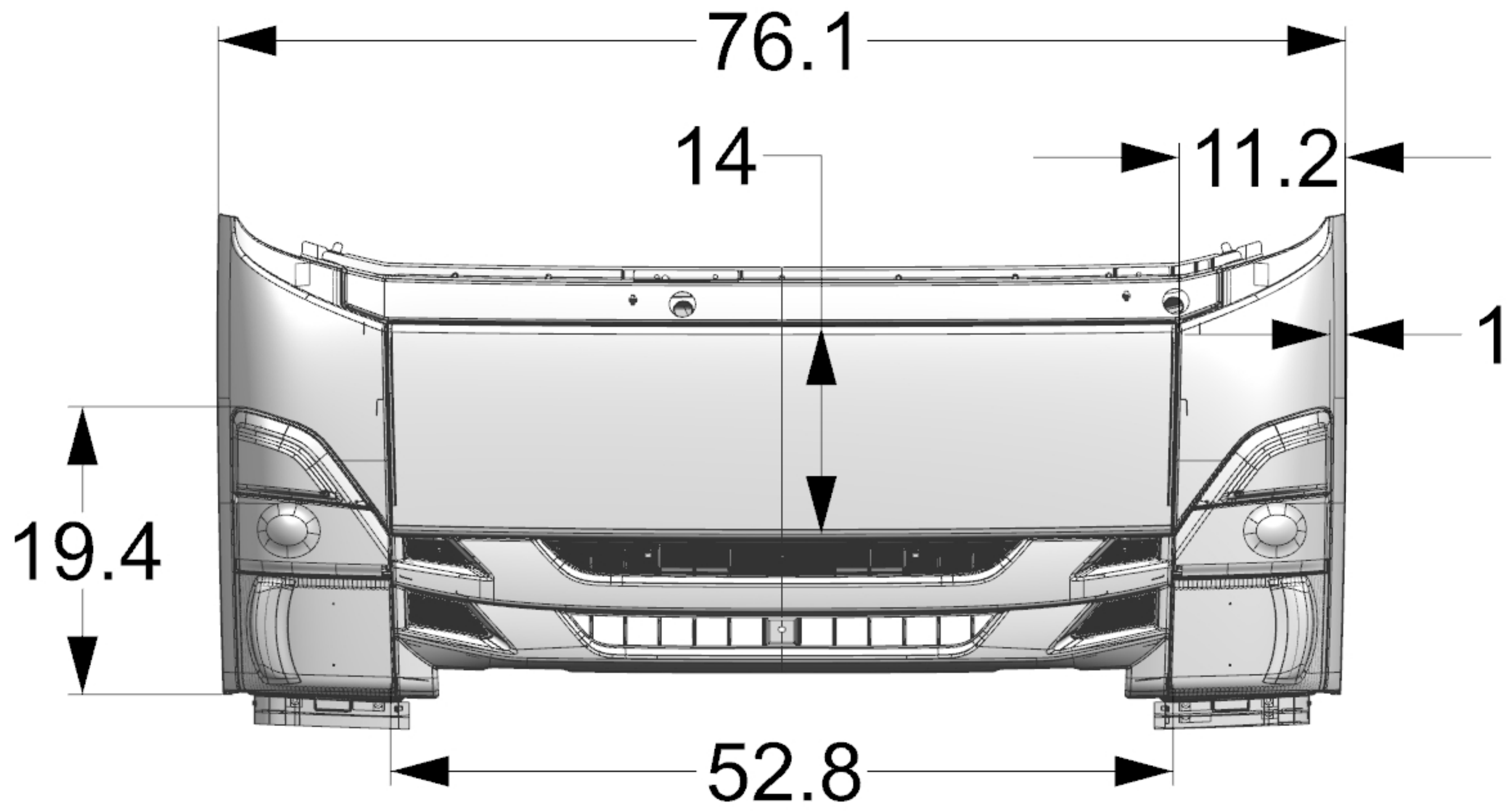
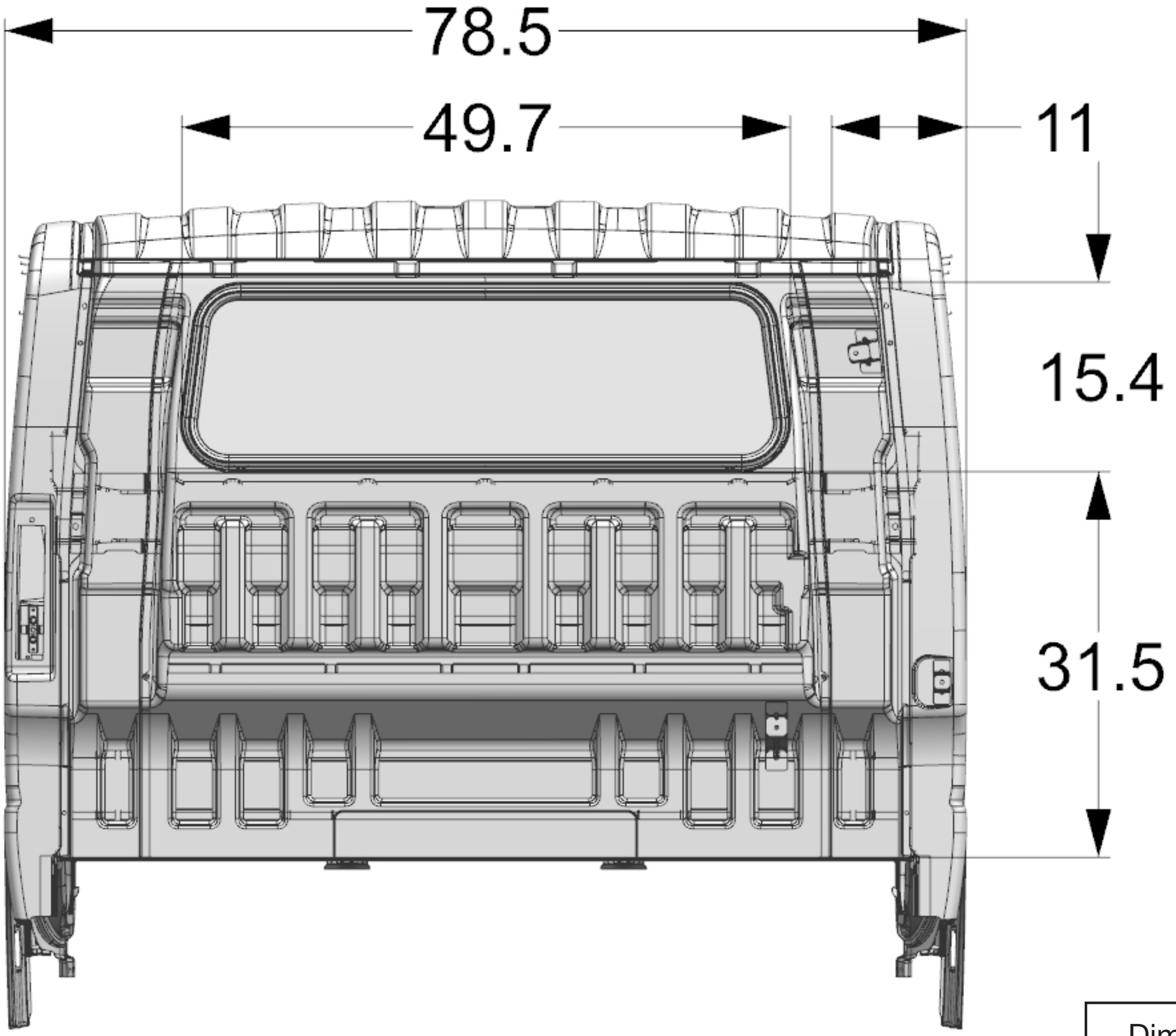

76.1
14
11.2
1
19.4
52.8

Figure 11

Dimensions in inches

26MY Gas Crew Cab - Rear View


78.5
49.7
11
15.4
31.5

Dimensions in inches

Figure 12

Single Cab - Front and Side View (Air Shield on Single Cab only)

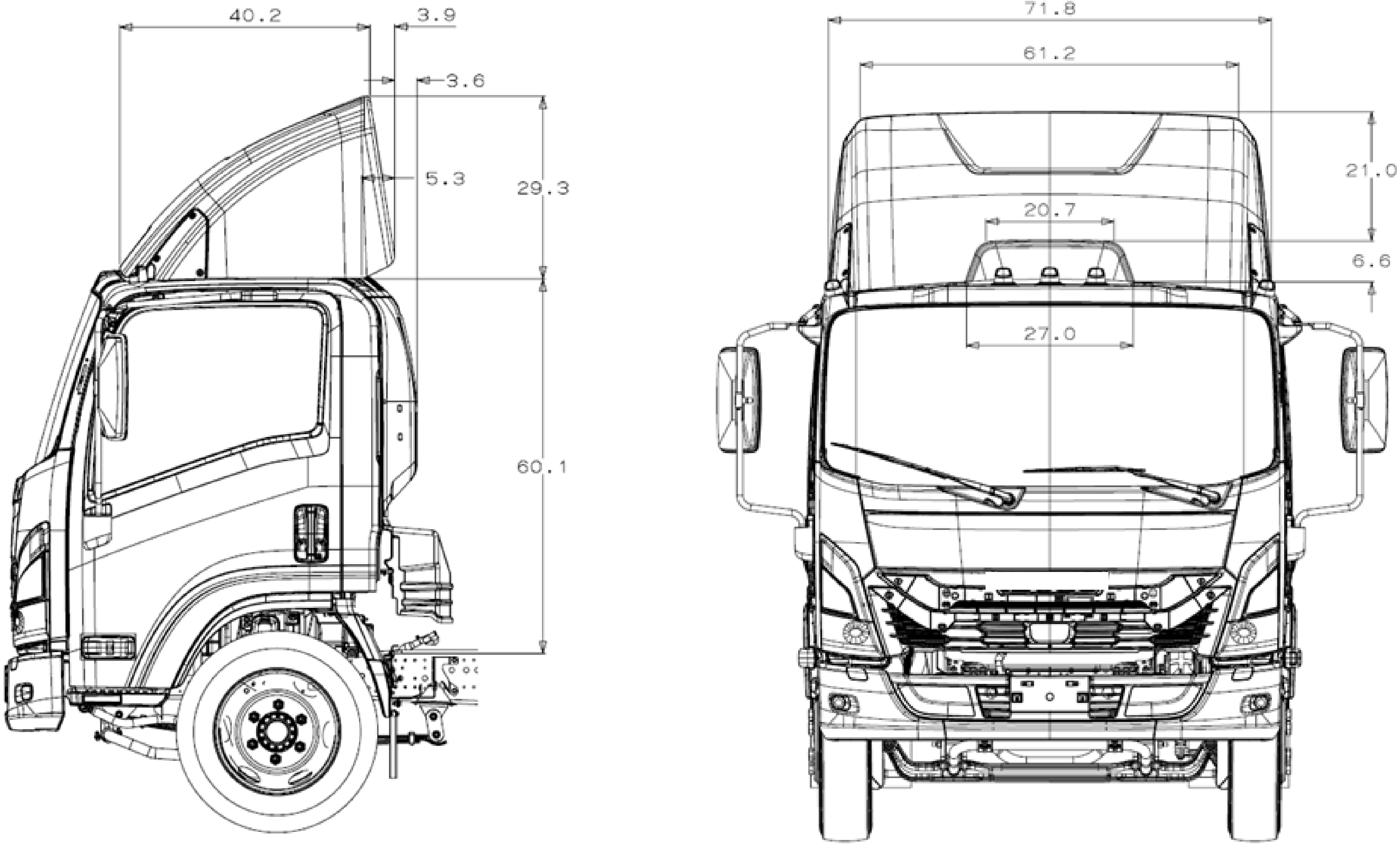

40.2
3.9
3.6
5.3
29.3
60.1
71.8
61.2
21.0
20.7
6.6
27.0

Figure 13

Dimensions in inches

Understanding DPF Regeneration

Understanding SCR (Selective Catalyst Reduction) and Diesel Exhaust Fluid (DEF)

The Selective Catalyst Reduction (SCR) system reduces nitrogen oxide (NOx) emissions emitted from a diesel engine. The SCR system reduces NOx by adding (injecting) Diesel Exhaust Fluid (DEF) into the exhaust system and inducing a reaction converting NOx into water vapor and nitrogen. This reaction takes place without any driver involvement. In addition, as long as the DEF tank is regularly filled with good quality DEF and at a satisfactory level above empty, the driver may never notice the SCR system.

It is the driver's responsibility to keep a good supply of quality DEF in the DEF tank for the proper operation of the SCR system. The SCR system will continuously monitor itself and the NOx reduction performance for any condition that will reduce or stop this emission reduction. The information provided in the remainder of this bulletin will outline the SCR system functions, common characteristics of the SCR system, DEF quality requirements and indicator and warning lights should the SCR system detect an incorrect fluid or if the DEF level in the DEF tank becomes too low.

SCR System Operation and The Driver

The SCR system requires good quality DEF for proper operation. The system is equipped with various sensors to detect the proper fluid is added to the DEF tank. The driver's only responsibility is to add good quality DEF to the DEF tank as necessary. The DEF level gauge on the instrument cluster shows the amount of DEF remaining. In addition the Mutli Information Display (MID) will provide additional notice to encourage the driver to add DEF. In order to keep the SCR system operational and emissions compliant a warning system will activate when the DEF level becomes too low (see DEF Low Level Warning System).

After starting the engine the SCR control module will pressurize the system and based on various sensor inputs begin to reduce NOx emissions. No driver action is necessary for the SCR system to function. After the engine is turned "OFF" the SCR control module will reduce system pressure and recover all DEF in the system piping back to the DEF tank. This action is taken as cold weather protection.

Note: Drivers may notice a buzzing noise from the driver side of the vehicle near the DEF tank a few moments after turning "OFF" the engine. This is a function of the SCR system and should be considered normal.

During cold weather seasons DEF may freeze in the DEF tank. Once the engine is started, engine coolant circulates through the DEF tank to thaw it when frozen and prevent it from freezing while the engine is running. The vehicle can be driven normally when DEF is frozen in the DEF tank

Adding DEF

Under normal conditions DEF can be added simply by removing the DEF tank fill cap and pouring in DEF. A few points to be aware of when transferring DEF from its original container to the DEF tank are:

1. Be sure the outside of the container is clean from any debris
2. If using a funnel or pump to transfer DEF, be sure to use equipment exclusively for DEF made from polyethylene resin or stainless steel.
3. Do not overfill the DEF tank

Take care not to spill DEF. When DEF dries it will leave a crystalline residue. This condition is normal. Wash, with water, or wipe away the residue to prevent it from entering the DEF tank. If DEF is spilled on the body or frame, it may cause the metal to rust, so wipe it off and then rinse it away with water.

Note: For cold weather climates (ambient temperatures below -11°C/12°F)

Chevrolet does not recommend parking the vehicle for long periods with the refill diesel exhaust fluid (DEF) warning light on in cold weather. The DEF low level warning system may not reset when DEF is added. Take the following actions to avoid this condition in cold weather.

1. Refill the DEF as soon as possible after parked vehicle.
2. Turn the engine control switch to the “ON” position from the “LOCK” position.
3. Wait for the warning buzzers and warning lights to turn off.
4. If the buzzer does not stop, return the engine control switch back to the “LOCK” position and add more DEF, and then start over the step (2) above.
5. Turn the engine control switch to the “LOCK” position.Turn the engine control switch to the “ON” position from the “LOCK” position.
6. Wait for the warning buzzers and warning lights to turn off.
7. If the buzzer does not stop, return the control switch back to the “LOCK” position and add more DEF, and then start over the step (2) above.
8. Turn the engine control switch to the “LOCK” position.

DEF Low Level Warning System

To avoid running out of DEF the SCR system will turn on warning and indicator lights and reduce engine power in progressive stages to encourage adding DEF. The following is a summary of the diesel exhaust fluid (DEF) low level warning lights, indicator lights and engine power reductions. Continuing to drive for too long after these lights come on will eventually result in a severe vehicle speed limitation. These warning and indicator lights will go out automatically and engine power will be restored to normal after the SCR system detects that the DEF tank is refilled with DEF.

Stage 1: When the remaining level of DEF becomes excessively low the DEF gauge will change color from green to amber. In addition, warning and indicator lights will come on as shown in the table and engine power will be reduced so the vehicle speed will not exceed 55 MPH (89 km/h).

Stage 2: If driving is continued without adding DEF (approximately 200 miles (320 km)) the DEF gauge, warning and indicator lights will begin blinking. Again, engine power will be reduced so the vehicle speed will not exceed 35 MPH (56 km/h).

Stage 3: If driving is continued until the DEF tank is empty, the DEF gauge will change color from amber to red and the warning and indicator lights will begin to blink faster. Engine power will still be reduced so the vehicle speed will not exceed 35 MPH (56 km/h). The vehicle speed will be limited to 5 MPH (8 km/h) either when the vehicle is stopped after driving further on (approximately 35 miles (56 km)) or when the engine is restarted.

Stage 4: The DEF gauge is red, the indicator light is blinking and the buzzer is beeping continuously indicates the vehicle speed is limited to 5 MPH (8 km/h).

DEF Quality and Storage

Diesel Exhaust Fluid is a urea-based chemical reactant designed specifically for use in SCR systems to reduce NOx emissions. The raw materials used to produce DEF include natural gas, coal or other petroleum products. DEF is prepared by combining high purity urea with deionized water to create a 32.5% solution. DEF and similar urea-based products are widely used today for a variety of agricultural and industrial needs. Chevrolet DEF is API certified and meets ISO22241 specifications for purity and composition, while being:

- Non-toxic and non-polluting
- Non-flammable
- Stable and colorless
- Non-hazardous

DEF should be stored in an indoor place with good ventilation avoiding direct sunlight, if possible. Be sure containers are sealed properly to avoid contamination and evaporation. To maximize shelf life, ideal storage temperature is below 30°C/86°F and above -11°C/12°F to prevent freezing. If frozen DEF can be thawed and used without any concerns.

DEF Safety

Though it should be harmless for physical contact, there may be a rare case to induce inflammation depending on the body constitution, so make sure to take following actions.

- In the event that the fluid does come into contact with your skin, wash it off with water. Although it is rare, a person with sensitive skin may suffer from irritation. If you come into contact with DEF, flush the affected area with soap and/or water. If irritation or redness develops or persists, seek medical attention.
- If it is accidentally swallowed, drink 1- 2 glasses of water or milk and seek immediate medical attention.
- If it does come into contact with the eyes, immediately rinse it off with a large amount of water for at least 15 minutes, and then seek medical attention.

Customer Assistance in locating DEF

DEF is available from all authorized Chevrolet dealers. In addition, the U.S. Department of Energy has created an on-line DEF locator that can be accessed at www.afdc.energy.gov/afdc/locator/def/ . The American Petroleum Institute (API) also maintains a list of API-certified distributors of DEF on their web page at http://www.apidef.org/

Preparation of New Vehicles for Storage Beyond 30-days

In the event new vehicles are to be stored for extended periods beyond thirty (30) days, the following additional maintenance items are suggested:

NOTE: When new vehicles are stored outside, particularly along coastal areas, paint and bright metal deterioration will be more rapid due to prevailing saltwater atmosphere and high humidity. For this reason, it may be necessary to wash each vehicle and wax the chrome and stainless steel metal parts at least once a month.

NOTE: To prevent the possibility of a build-up of mildew, open the doors to air out each vehicle at least once a month depending upon climatic condition. If there is condensation, wipe the condensation dry with a clean cloth and air out the vehicles.

A. “Block out” mechanical clutches by holding the clutch pedal partially depressed (approximately 1/2 way) with wooden blocks or bracing. This will prevent clutch plates from rusting to the flywheel and clutch pressure plate.
B. Remove windshield wiper arms and blades and store in the vehicle.

In addition, the following procedures are to be carried out at thirty (30)-day intervals and instituted after the first thirty (30) days of vehicle storage.

A. Check the battery water level and specific gravity. **If voltage is under 12.20 volts, recharge the battery**.
B. Connect the battery ground cable. Start engine in P range and let idle for at least twenty (20) seconds.
C. Raise the idle up to 2,000 rpm for fifteen (15) minutes. Be sure there is sufficient fuel in tank. Each new vehicle is supplied with approximately 1.5 gallons of fuel. Do not let the tank run dry.
D. Shift the transmission lever to all positions while the engine is running.
E. Move the vehicle for a distance of at least thirty (30) feet to lubricate the wheel bearings.
NOTE: The vehicle should be re-parked so that a different area of the tires is in contact with the ground to reduce the possibility of tire damage.
F. Turn the steering wheel lock-to-lock while the vehicle is moving slowly.
G. Apply and release the service and parking brakes several times (do not apply the parking brake when the vehicle is moving).
H. Stop the engine.
I. After warm-up operation, check under the vehicle to make sure there is no oil or fluid leakage.
J. Disconnect the battery ground cable.
K. Drain the brake air reservoirs (if appropriate) and close the drain cocks.

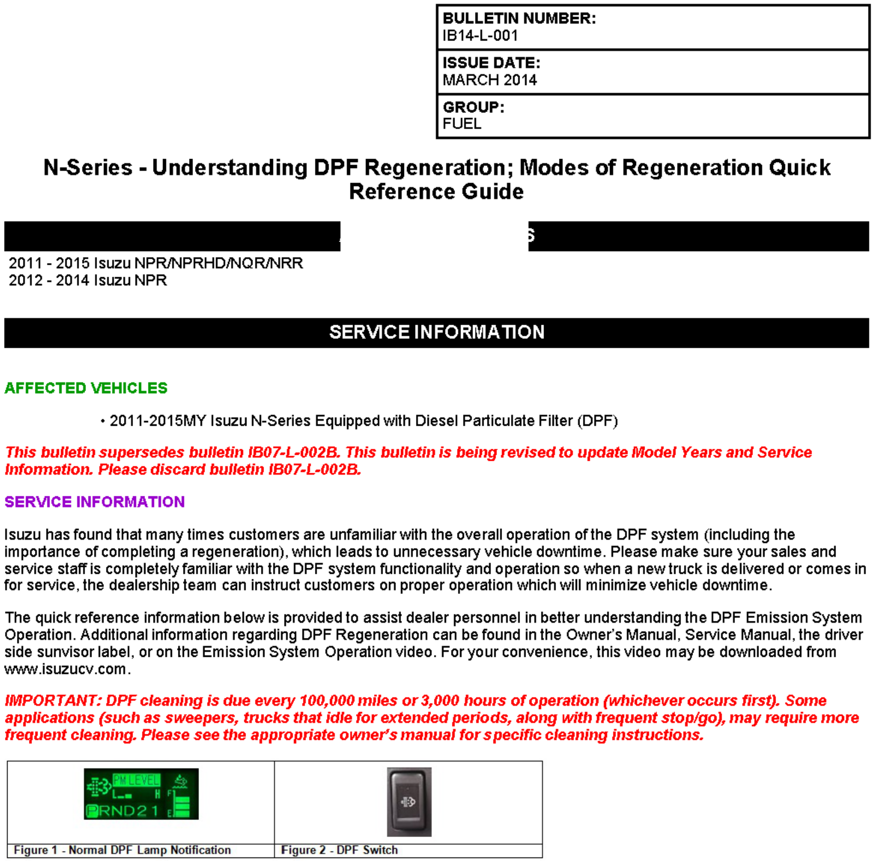
New Vehicles Stored Beyond One Year

In the event new vehicles are to be stored for extended periods beyond one (1) year, the following additional maintenance is required every twelve (12) months:

A. Replace engine oil, coolant, brake fluid, transmission oil, differential gear oil and all other fluids.
B. Drain and refill diesel exhaust fluid (DEF).
C. Drain and refill fuel (diesel and gasoline).
D. Replace fuel filters (diesel only).

Modes of Regeneration Quick Reference Guide

- **2011-2015MY Chevrolet LCF Equipped with Diesel Particulate Filter (DPF)**



BULLETIN NUMBER:
IB14-L-001

ISSUE DATE:
MARCH 2014

GROUP:
FUEL

N-Series - Understanding DPF Regeneration; Modes of Regeneration Quick Reference Guide

[redacted]

2011 - 2015 Isuzu NPR/NPRHD/NQR/NRR
2012 - 2014 Isuzu NPR

SERVICE INFORMATION

AFFECTED VEHICLES

- 2011-2015MY Isuzu N-Series Equipped with Diesel Particulate Filter (DPF)

This bulletin supersedes bulletin IB07-L-002B. This bulletin is being revised to update Model Years and Service Information. Please discard bulletin IB07-L-002B.

SERVICE INFORMATION

Isuzu has found that many times customers are unfamiliar with the overall operation of the DPF system (including the importance of completing a regeneration), which leads to unnecessary vehicle downtime. Please make sure your sales and service staff is completely familiar with the DPF system functionality and operation so when a new truck is delivered or comes in for service, the dealership team can instruct customers on proper operation which will minimize vehicle downtime.

The quick reference information below is provided to assist dealer personnel in better understanding the DPF Emission System Operation. Additional information regarding DPF Regeneration can be found in the Owner's Manual, Service Manual, the driver side sunvisor label, or on the Emission System Operation video. For your convenience, this video may be downloaded from www.isuzucv.com.

IMPORTANT: DPF cleaning is due every 100,000 miles or 3,000 hours of operation (whichever occurs first). Some applications (such as sweepers, trucks that idle for extended periods, along with frequent stop/go), may require more frequent cleaning. Please see the appropriate owner's manual for specific cleaning instructions.

Figure 1 - Normal DPF Lamp Notification

Figure 2 - DPF Switch

IMPORTANT: Before starting DPF regeneration, ensure that the exhaust area is clear of grass, leaves, or any dry debris that could ignite, as this area will become very hot during regeneration.

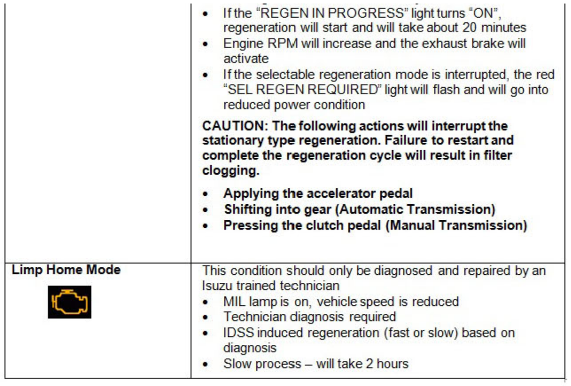
MID Message	Action Required	Description
REGEN. IN PROGRESS	No Action Required	DPF filter is in Regeneration Mode.
REGEN. REQUIRED	When Possible	**Perform Running Regeneration** – Drive vehicle above 30 mph (50 km/h) for approximately 20 minutes until "REGEN IN PROGRESS" message goes off or, if that is not possible, perform the **Switch Regeneration** described below. A REGEN can also occur when stationary with the transmission in "P".
REGEN. REQUIRED	Immediately	
SEL.REGEN. REQUIRED	When Possible	**Perform Selectable (Switch) Regeneration** – Idle in "P" (A/T) or neutral (M/T) with the parking brake on, press the switch and continue idling approximately 20 minutes until "REGEN IN PROGRESS" message goes off.
SEL.REGEN. REQUIRED	Immediately	
CHECKING PM LEVEL	When Possible	Illuminates when the DPF switch is held down. When ON, the system is checking whether or not Selectable (Switch) regeneration is possible, and then changes to the required warning light. If the switch does not change, regeneration is not required.

IMPORTANT: Before starting DPF regeneration, ensure that the exhaust area is clear of grass, leaves, or any dry debris that could ignite, as this area will become very hot during regeneration.

REGENERATION MODES

Mode Name	Description
Automatic Regeneration	- ECM monitors sensor inputs and determines if DPF regeneration is necessary - The ECM will command "REGEN IN PROGRESS" message - Vehicle should be driven normally **Note:** If idling at a stop or in "Park" during this regeneration mode, the engine RPM will increase and the exhaust brake will activate. **Note:** DPF regeneration may be initiated automatically during prolonged idling. The "REGEN IN PROGRESS" light will illuminate – this is normal and does not indicate a failure.
Emergency Regeneration	**Yellow or Red "REGEN REQUIRED" light comes "ON" Driver must choose one of the following options to perform this regeneration. If one of the following options is not completed, Limp Home Mode may be activated.** **Running Option 1:** - Operate vehicle above 30mph for approximately 20 minutes - ECM will determine if regeneration is necessary - Drive until the "REGEN IN PROGRESS" message goes off, or if that is not possible, perform the **Switch Regeneration** as described below **Switched Option 2:** - Set the parking brake with engine running and transmission in Park or Neutral Position - Press the DPF button - Continue idling for approximately 20 minutes until the "REGEN IN PROGRESS" message goes off **IMPORTANT: Once Emergency Switched or Selectable Regeneration Modes have been selected, the Emergency Running Modes are no longer available. Automatic and Emergency Running Modes will become available after Switched or Selectable DPF regeneration is completed.**

Selectable Regeneration
 	
 CHECKING
PM LEVEL
PRND21
	NOTE: For quickest possible regeneration, be sure the vehicle is at operating temperature before performing selectable regeneration.
	- Engine is running and in "Park" position
	- Parking brake is applied
	- Press and hold the DPF button
	  ➢ "CHECKING PM LEVEL" will turn "ON" when the system is checking if "Selectable" regeneration is possible
	  ➢ If the regeneration light does not stay "ON", regeneration is not necessary



	• If the "REGEN IN PROGRESS" light turns "ON", regeneration will start and will take about 20 minutes • Engine RPM will increase and the exhaust brake will activate • If the selectable regeneration mode is interrupted, the red "SEL REGEN REQUIRED" light will flash and will go into reduced power condition **CAUTION: The following actions will interrupt the stationary type regeneration. Failure to restart and complete the regeneration cycle will result in filter clogging.** • **Applying the accelerator pedal** • **Shifting into gear (Automatic Transmission)** • **Pressing the clutch pedal (Manual Transmission)**
Limp Home Mode	This condition should only be diagnosed and repaired by an Isuzu trained technician • MIL lamp is on, vehicle speed is reduced • Technician diagnosis required • IDSS induced regeneration (fast or slow) based on diagnosis • Slow process – will take 2 hours

IMPORTANT: If the truck continues be operated without regenerating you will notice:

- ***Engine reduced power condition with the red "REGEN REQUIRED" light***
- ***Illuminated check engine light***
- ***You must take vehicle to dealer for service***

Limited Slip Differential Fluid

Should it become necessary to add fluid to the rear axle of a chassis equipped with a limited slip differential please consult the Owners Manual for the appropriate selection of lubricants to be used.

	Axle Housing Stamp	
Ratio	Stand Axle	LSD Axle
4.300	SO	HO
4.555	C9	D9
4.777	S9	H9
5.125	C8	D8
5.375	S8	H8
5.571	A7	B7
5.857	C7	D7

CAN Interface Converter Information

Instructions for FMS Jumper Harness Installation

- The optional FMS Jumper Harness provides a standard 9-pin heavy duty connector for the integration of fleet management systems (FMS) and other telematics devices that require read-only CAN information from the chassis.
- To comply with California regulations, the final location of the provided 9-pin heavy duty connector (black) should not be within proximity of the existing chassis OBD connector. Figure 1 shows the restricted area where connector mounting should be avoided.
- The FMS Jumper Harness is located within the passenger side tray below the airbag as shown in Figure 2.

① Remove the FMS Jumper Harness from its bag and find the connectors on either end.
  a) Identify the white 6-pin female connector located on one end of the harness shown in Figure 3.
  b) Identify the black 9-pin heavy duty connector located on the other end of the harness Figure 3.
② Find the white 6-pin chassis side connector located at the edge of the dash adjacent to the cup holder as shown in Figure 4.
  a) Connect the white 6-pin female end of the FMS Jumper Harness with this connector.
③ Route the FMS Jumper Harness so that the 9-pin heavy duty connector's final location is outside of the restricted area indicated in Figure 1.
  a) The harness is 3 feet in length. Harness routing and the mounting location of telematics devices are at the installer's discretion.
④ Connect your FMS or other CAN device to the 9-pin heavy duty connector of the FMS Jumper Harness.

Important Note:
See Body Builder Guide Section 2 – Electrical Wiring and Harnessing for chassis wiring guidance

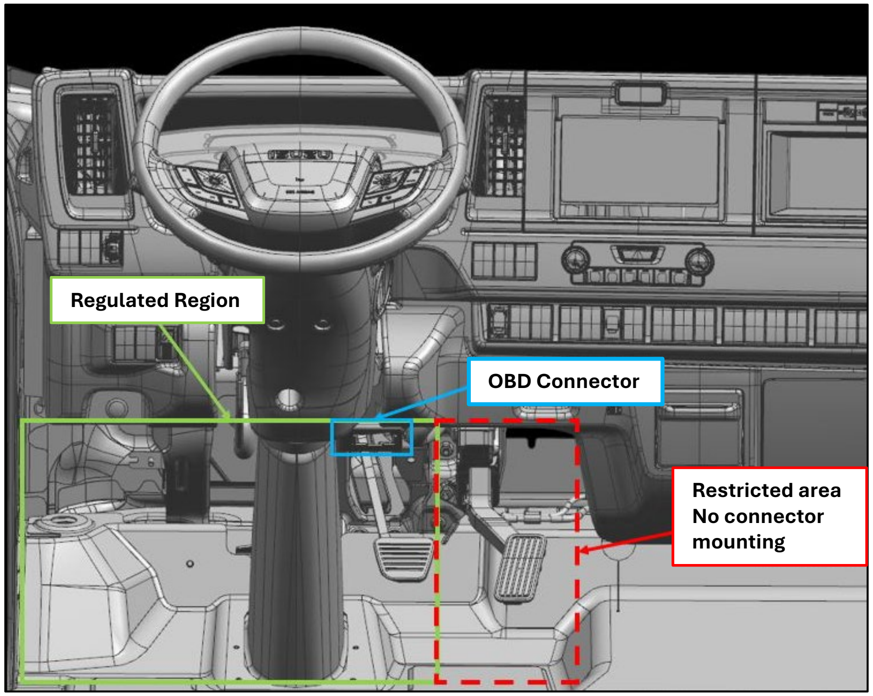


Figure 1

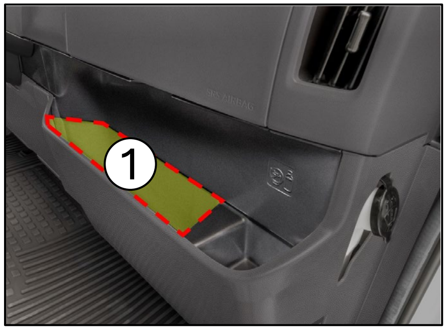


Figure 2

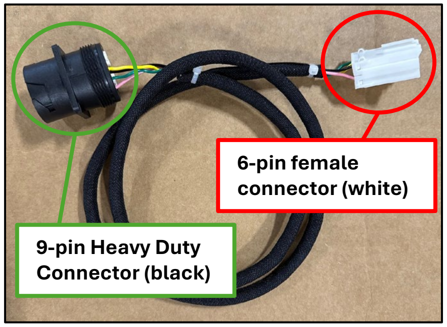


Figure 3

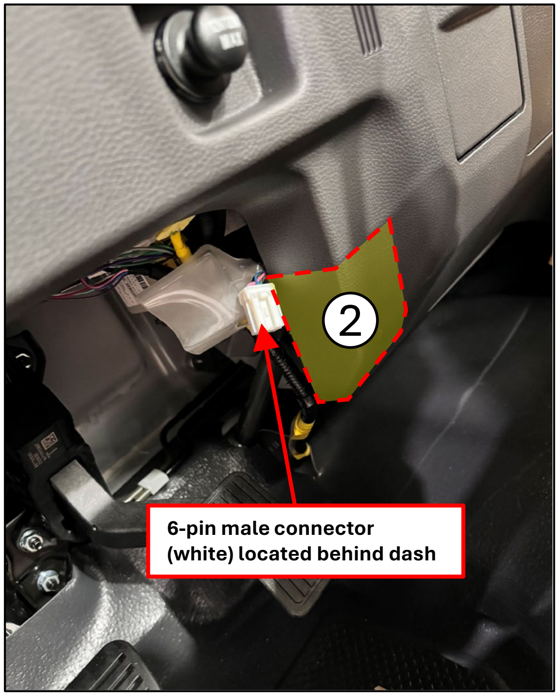


Figure 4

CAN Interface Converter General Guidelines

- Upfitters link their own control unit or telematics device to the CAN Interface Converter module via a connector. The upfitter is responsible for ensuring that the external CAN bus is used correctly.
- Control units connected to a CAN bus must be able to handle up to 100% of the CAN bus load and have no significant functional limitations or malfunctions.
- Avoid closing control loops over the CAN. The access time is relatively long and fast control loops require large amounts of bandwidth.
- Avoid CAN communication when the engine control switch is in the LOCK or ACC positions.
- Avoid CAN communication during the start sequence of the control units connected to the external CAN bus.
- During an engine start sequence (starter motor turning) the supply voltage can be low and communication from the CAN Interface Converter module cannot be guaranteed.
- Fault codes related to communication with the CAN Interface Converter module should not be set when the system voltage is under 9V.
- When the engine control switch is turned to the ON position, the CAN Interface Converter module starts sending messages within a few seconds.

CAN Interace Converter Connection Guidelines

Termination Resistor

- The CAN bus cable must be connected using a 120 Ohm resistor at each end in accordance with SAE J1939-15 Physical Layer. This allows CAN communication without interference.
  - The CAN Interface Converter harness contains one of the two 120 Ohm resistors.
  - The second termination resistor is required at the control unit / telematics device end of the harness.
- Certain devices have a built-in termination resistor (Figure 1) while others are not terminated. If the control unit is not equipped with an internal termination resistor, an external termination resistor must be connected as close to the control unit as possible (Figure 2).

Harness Connection

- The harness should be as short as possible to minimize the effect of electromagnetic interference.
- The length of the main cable must not exceed 100 feet between the CAN Interface Converter connector and Control Unit 1 (Figure 3).
- If more than one control unit is connected, the length of the cables between the main cable and additional control unit should not exceed 40 inches (Figure 3).
- There should be at least 4 inches between the nodes of each control unit cable on the main bus cable (Figure 3).
- The number of devices in the external CAN network should not exceed 9 control units.

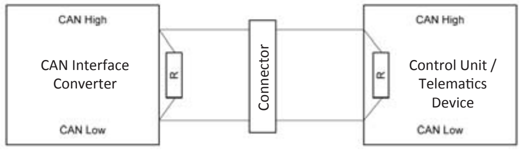

CAN High
CAN Interface Converter
CAN Low
R
Connector
R
CAN High
Control Unit / Telematics Device
CAN Low

Figure 1: Internal Termination Resistor

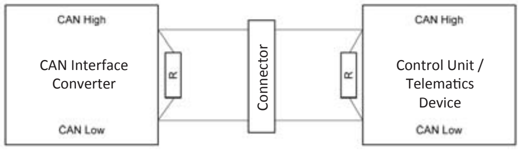

CAN High
CAN Interface Converter
CAN Low
R
Connector
R
CAN High
Control Unit / Telematics Device
CAN Low

Figure 2: External Termination Resistor

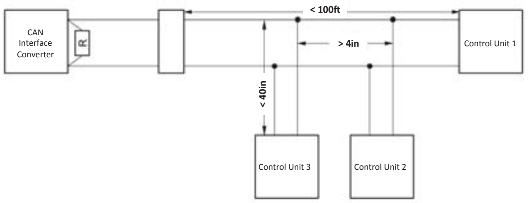
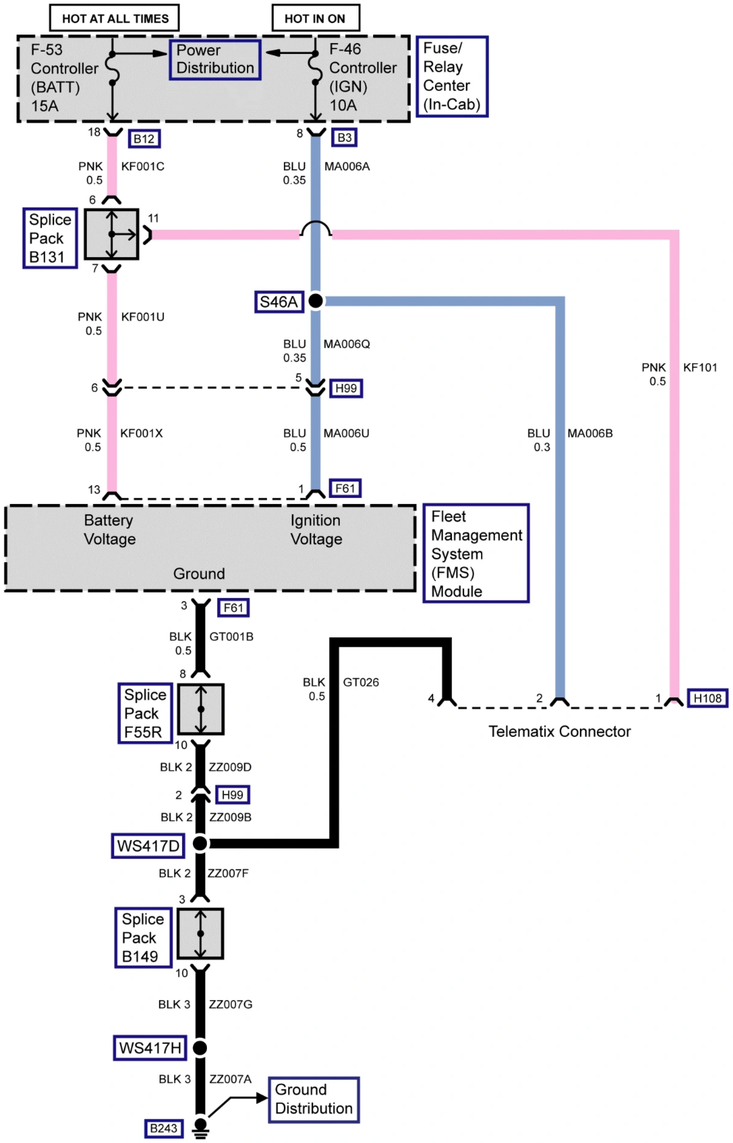

CAN Interface Converter
R
< 100ft
> 4in
< 40in
Control Unit 1
Control Unit 3
Control Unit 2

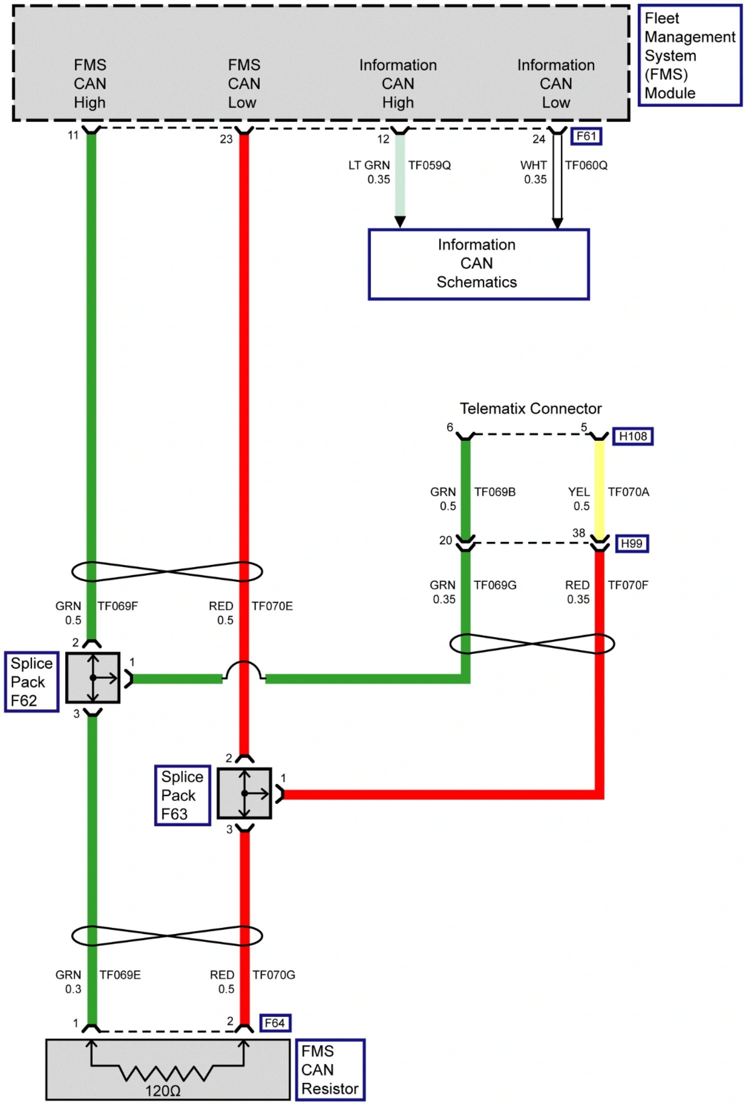
Figure 3: External CAN bus connection.

CAN Interface Converter Circuit Diagram

Module Power and Ground

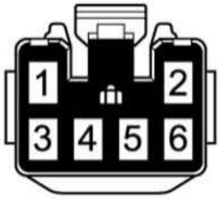

HOT AT ALL TIMES
HOT IN ON
F-53 Controller (BATT) 15A
Power Distribution
F-46 Controller (IGN) 10A
Fuse/ Relay Center (In-Cab)
18
B12
8
B3
PNK 0.5
KF001C
BLU 0.35
MA006A
6
Splice Pack B131
11
7
S46A
PNK 0.5
KF001U
BLU 0.35
MA006Q
5
H99
6
PNK 0.5
KF101
PNK 0.5
KF001X
BLU 0.5
MA006U
BLU 0.3
MA006B
13
1
F61
Battery Voltage
Ignition Voltage
Ground
Fleet Management System (FMS) Module
3
F61
BLK 0.5
GT001B
8
Splice Pack F55R
10
BLK 0.5
GT026
4
2
1
H108
Telematix Connector
BLK 2
ZZ009D
2
H99
BLK 2
ZZ009B
WS417D
BLK 2
ZZ007F
3
Splice Pack B149
10
BLK 3
ZZ007G
WS417H
BLK 3
ZZ007A
Ground Distribution
B243

Communication


FMS CAN High
FMS CAN Low
Information CAN High
Information CAN Low
Fleet Management System (FMS) Module
11
23
12
24
F61
LT GRN 0.35
TF059Q
WHT 0.35
TF060Q
Information CAN Schematics
Telematix Connector
6
5
H108
GRN 0.5
TF069B
YEL 0.5
TF070A
20
38
H99
GRN 0.35
TF069G
RED 0.35
TF070F
GRN 0.5
TF069F
RED 0.5
TF070E
2
Splice Pack F62
1
3
2
Splice Pack F63
1
3
GRN 0.3
TF069E
RED 0.5
TF070G
1
2
F64
120Ω
FMS CAN Resistor

CAN Interface Converter Connector

H108 Telematics Connection



con0125

Connector Part Information	• YAZAKI 7323-8365 • 6-WAY F (WHT)			Connector Part Information	• 6-WAY M		
Pin	**Wire Color**	**Circuit No.**	**Function**	**Pin**	**Wire Color**	**Circuit No.**	**Function**
1	PNK	KF101	FUSE F-53 POWER SUPPLY FROM SPLICE PACK B131 PIN 11	1	—	—	—
2	BLU	MA006B	FUSE F-46 CONTROLLER (IGN) 10A SUPPLY VOLTAGE FROM SPLICE S46A	2	—	—	—
3	—	—	NOT USED	3	—	—	NOT USED
4	BLK	GT026	GROUND TO WS417D (F84 GROUND)	4	—	—	—
5	YEL	TF070A	FMS CAN LOW FROM H99 PIN 38	5	—	—	—
6	GRN	TF069B	FMS CAN HIGH FROM H99 PIN 20	6	—	—	—

CAN Interface Converter Output

Summary of the messages supported by the CAN interface.
(Messages are sent to the external CAN bus from the vehicle.)

Message sent from vehicle	Identifier (Hex)	Specification	ISUZU FMS Interface
Cruise Control/Vehicle Speed 1	18 FE F1 00	SAE J1939-71	*
DM1(DTC record)	18 FE CA **	SAE J1939-73	*
Electronic Engine Controller 1	0C F0 04 00	SAE J1939-71	*
Electronic Engine Controller 2	0C F0 03 00	SAE J1939-71	*
Electronic Transmission Controller 5	1C FE C3 41	SAE J1939-71	*
Electronic Transmission Controller 2	18 F0 05 03	SAE J1939-71	*
Engine Hours, Revolutions	18 FE E5 41	SAE J1939-71	*
Engine Temperature 1	18 FE EE 00	SAE J1939-71	*
FMS-standard Interface Identity/Capabilities	1C FD D1 41	SAE J1939-71	*
Fuel Consumption (Liquid)	18 FE E9 41	SAE J1939-71	*
Fuel Economy (Liquid)	18 FE F2 41	SAE J1939-71	*
High Resolution Vehicle Distance	18 FE C1 41	SAE J1939-71	*
Idle Operation	18 FE DC 41	SAE J1939-71	*
Auxiliary Input/Output Status 1	18 FE D9 00	SAE J1939-71	*
Time/Date	18 FE E6 41	SAE J1939-71	*
Vehicle Distance	18 FE E0 41	SAE J1939-71	*
Vehicle Identification	18 FE EC 41	SAE J1939-71	*
Wheel Speed Information	18 FE BF 0B	SAE J1939-71	*

NOTES

* GM CAN Interface provides this message.

** Applies to all values between 00h and FFh.

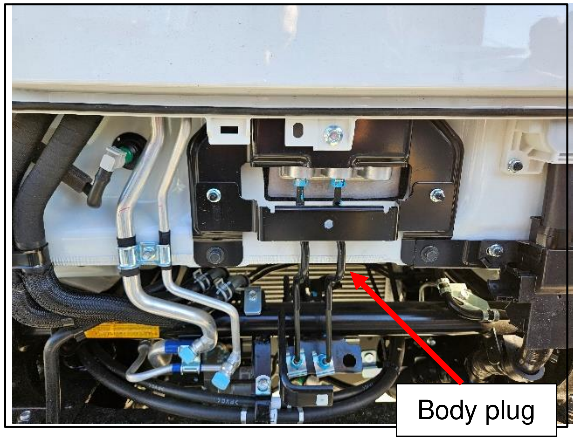
Cab Body Plug

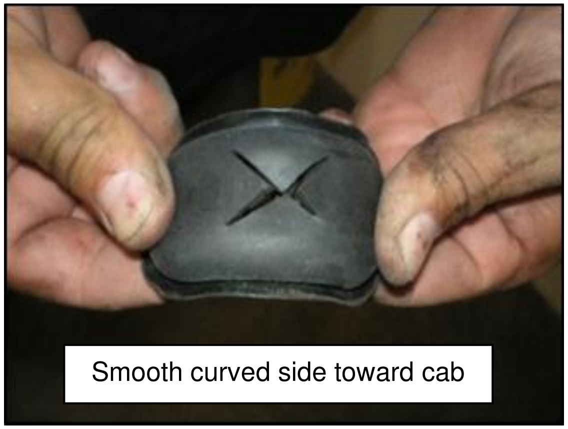
To avoid drilling through the cab floor for electrical wiring, there is a body plug access point for routing wires into/out of the cab. Follow the instructions below to access this body plug.

Disassembly of Front Grille

1. Remove one (1) phillips head screw <REUSE>.
2. Remove grille from cab by gently pulling outward to release five (5) top clips, one center clip, and two (2) lower clips.

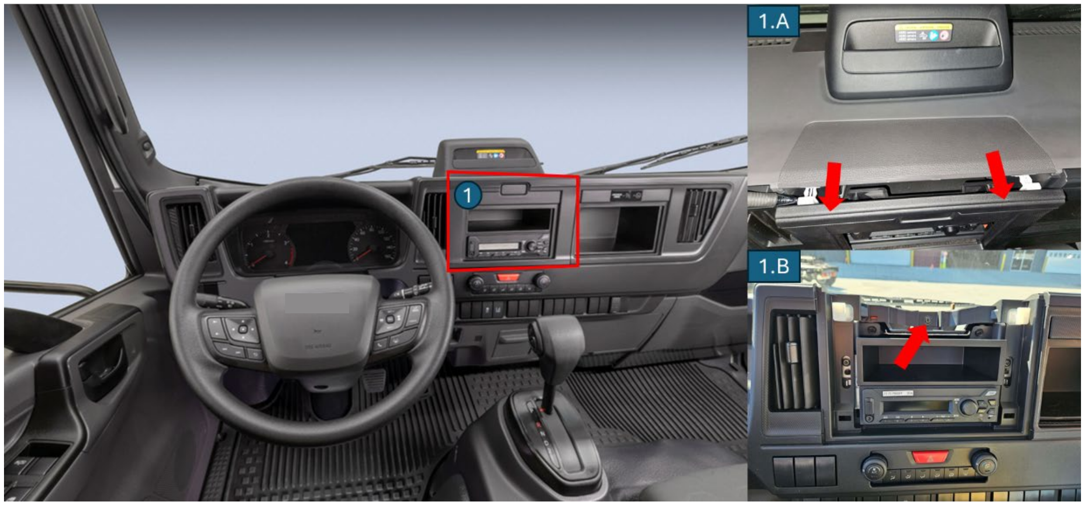
3. From front of vehicle, locate body plug in middle of vehicle behind brake lines. Remove plug, cut approximately a 1”x1” X in the middle, set aside.



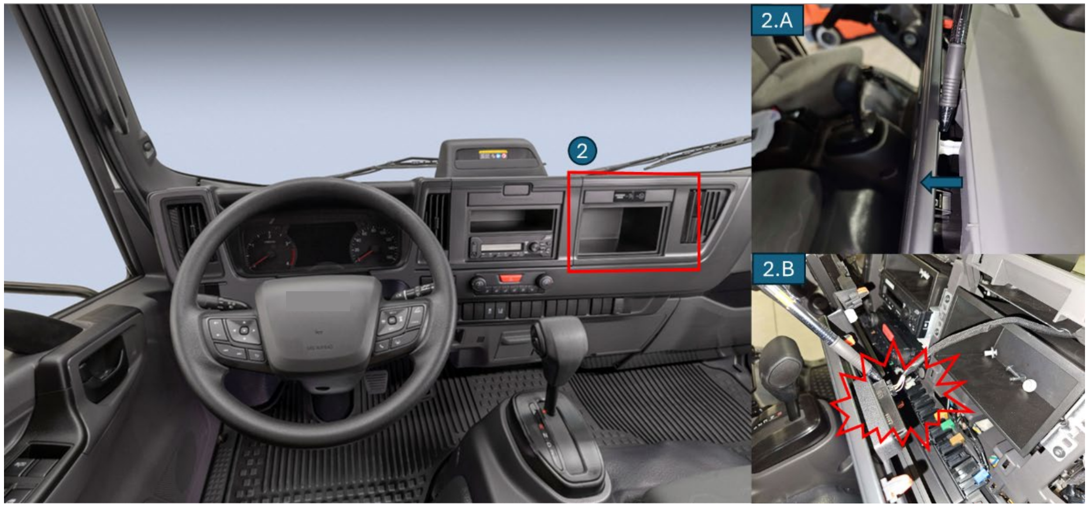


Upper Dash Trim Removal

- STEP 1: Remove radio trim (1.A) and retaining screw (1.B). Gently pull dash trim (no more than 1/2”) outward.



- STEP 2: Remove air bag indicator trim (2.A) and air bag indicator harness (2.B). Remove connectors from switches and or blanking plates (make note of each connectors position before removal). Set aside dash trim.



Back Up Camera Installation Information

Back Up Camera Mounting Information

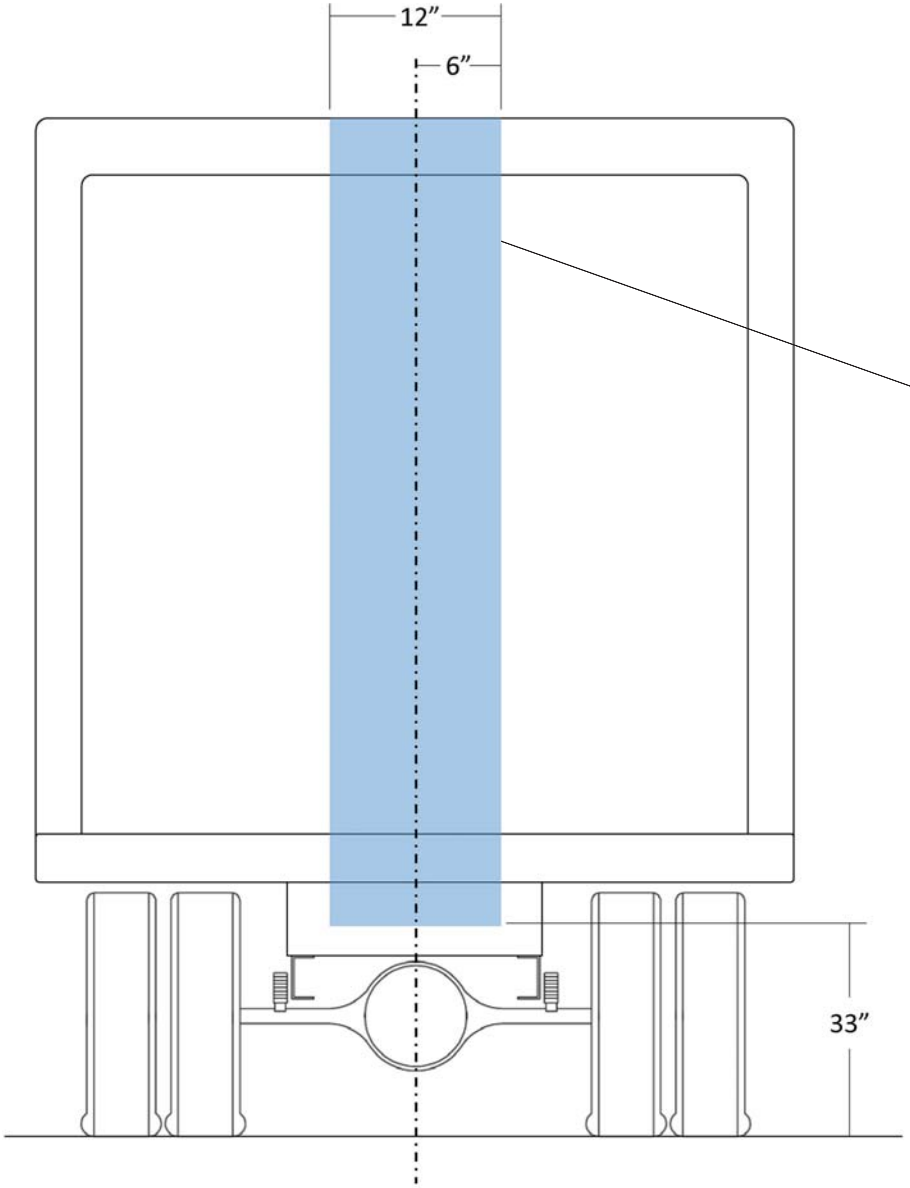


Figure 10 – Camera Mounting Area

HCE-C1100 Camera Mounting
Plate Hole Pattern

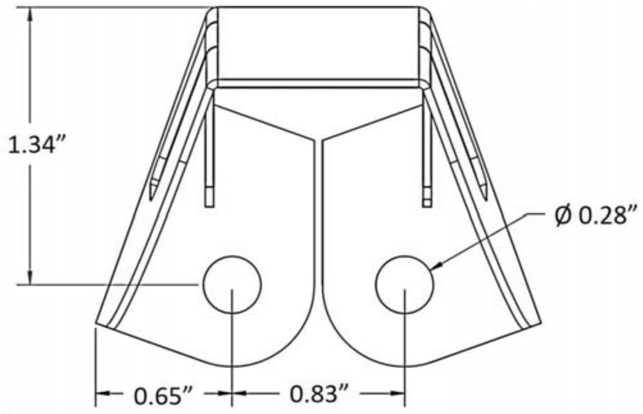


Figure 11 – Camera Mounting Hole Pattern

The Alpine HCE-C1100 camera should be mounted within the shaded area shown in Figure 10 to ensure proper rear visibility. In addition to the two mounting holes shown in Figure 11, a third hole is needed for the camera harness. This camera harness hole should be protected with a rubber grommet to prevent damage to the wiring that will pass through it. The rubber grommet and fasteners will not be included with the camera installation kit.